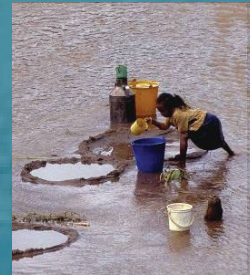


June 2009

Senator Paul Simon

Water for the Poor Act



Report to Congress



Bureau of Oceans, Environment, and Science
U.S. Department of State

Printed June 2009

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I am pleased to present the 2009 Report to Congress on the implementation of the Senator Paul Simon Water for the Poor Act. Perhaps no two issues are more important to human health, economic development, and peace and security than basic sanitation and access to sustainable supplies of water.

I have witnessed this first-hand. Without reliable supplies of clean water, people cannot live, farmers cannot grow crops, and the environment on which we all depend cannot survive. Without proper sanitation, human health and dignity suffer, and the environment and water supplies often become contaminated. Together, we must work to ensure that no child dies from a preventable water-related disease, that no girl fears going to school for lack of access to a separate toilet, that no woman walks six kilometers to collect water for her family, and that no war is ever fought over water.

In his inaugural address on January 20, 2009, President Obama said “[T]o the people of poor nations, we pledge to work alongside you to make your farms flourish and let clean waters flow; to nourish starved bodies and feed hungry minds.” I can think of no better way to honor the legacy of Senator Paul Simon, who did so much for so many, than to commit ourselves to achieving this vision and the ideals of the Senator Paul Simon Water for the Poor Act.

A handwritten signature in blue ink that reads "Hillary Rodham Clinton". The signature is written in a cursive, flowing style with a large initial 'H'.

Hillary Rodham Clinton
Secretary of State

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Executive Summary

The Senator Paul Simon Water for the Poor Act of 2005 (the WfP Act) was signed into law on December 1, 2005. The Act makes access to safe water and sanitation a specific policy objective of U.S. foreign assistance. It requires the Secretary of State, in consultation with the U.S. Agency for International Development (USAID) and other U.S. Government agencies, to develop and implement a strategy “to provide affordable and equitable access to safe water and sanitation in developing countries” within the context of sound water resources management. It also requires the Secretary of State, in consultation with the USAID Administrator, to submit an annual report to Congress describing changes in the U.S. strategy and progress in achieving the objectives of the WfP Act. This is the fourth report to Congress since the passage of the WfP Act.

In FY 2008, the United States obligated more than \$1 billion for water- and sanitation-related activities in developing countries (excluding Iraq). Of that amount, over \$815 million was obligated in 95 countries worldwide to improve access to safe drinking water and sanitation and promote hygiene. Investments in Sub-Saharan Africa rose to \$648.7 million in FY 2008, largely due to obligations by the Millennium Challenge Corporation (MCC) under Compacts signed in FY 2007. The United States is one of the largest bilateral donors to water and sanitation activities in developing countries, accounting for 10 percent of all official assistance to the water and sanitation sector in 2006–2007. The United States also remains one of the largest donors to several multilateral development banks and intergovernmental organizations, which are significant contributors to water and sanitation projects.

While many U.S. agencies and departments contribute to international water and sanitation efforts, USAID and MCC provide the vast majority of U.S. financial support for international water and sanitation programs. In FY 2008, USAID obligated \$489.6 million for water- and sanitation-related activities in 75 countries. Obligations for improving access to safe drinking water, sanitation, and hygiene increased 45 percent over FY 2007

RESULTS AT A GLANCE, FY 2008

- The United States obligated more than \$1 billion in support of water and sanitation
- More than \$815 million was obligated to improve access to safe drinking water and sanitation and promote hygiene in 95 countries worldwide
- Investments in all water and sanitation activities in Sub-Saharan Africa reached more than \$648 million
- USAID’s efforts alone led to improved access to safe drinking water and sanitation for 7.7 million and 6.3 million people, respectively

and represented 79.6 percent of overall water-related obligations. Resources committed to water resources management and water productivity increased over FY 2007 but remain a very small percentage of overall support for water and sanitation. Funding support to the Sub-Saharan Africa region nearly doubled over 2008 and now represents 43 percent of total USAID support—more than to any other region. USAID also exceeded the 2008 statutory requirement in the Department of State, Foreign Operations, and Related Programs Appropriations Act that “... not less than \$300,000,000 shall be made available for safe drinking water and sanitation supply projects, including water management related to safe drinking water and sanitation.” As a result of USAID investments, more than 7.7 million people received improved access to safe drinking water and nearly 6.3 million received improved access to sanitation. Of these, more than 4.6 million received first-time access to an improved drinking water source and more than 2.1 million to improved sanitation. USAID-sponsored activities to improve the quality of water at its point of use resulted in more than 7.4 billion liters of disinfected drinking water.

In FY 2008, the MCC obligated \$546.9 million to water- and sanitation-related activities, a significant increase from FY 2007. Nearly 80 percent (\$429.0 million) of the total was obligated for safe drinking water, sanitation, and hygiene projects. The MCC also committed \$166.4 million for water and sanitation activities in Burkina Faso, Mongolia, and Tanzania. Forty-one percent of these new commitments are for drinking water and

sanitation projects; 98 percent are directed towards urban areas.

Previous reports to Congress have developed a broad strategic framework to advance U.S. efforts to achieve water security in developing countries. This report presents—for the first time—country specific plans for achieving U.S. goals and objectives along with measurable indicators to track progress and report results. Future reports will include plans for each of the U.S. priority countries. The report also highlights the work of U.S. agencies and departments to build partnerships, improve science and technology capacity, and increase political will among developing and donor countries to address water and sanitation challenges. Finally, this report builds on the USAID/DOS Joint Framework for Action by giving special consideration to three key emerging challenges: increasing access to safe drinking water and sanitation, and promoting hygiene for the poorest populations; responding to climate change; and increasing food productivity.

Almost two out of three people without access to clean water live on less than \$2 a day. In urban areas, rapid migration into cities often outpaces governments' abilities to provide services to the poorest people. Many water and sanitation utilities have poor performance records and have failed to increase access for the urban poor. In rural areas where community management of water supply and sanitation prevails, obstacles to expanding and maintaining services to the poor include difficulties in accessing credit, mobilizing competent staff, and engaging the private sector. Recommended responses include mobilizing pro-poor financing for infrastructure improvements; supporting innovative service delivery alternatives; increasing demand among the poor for water, sanitation, and hygiene services; and increasing political will to address the needs of the poor and advance pro-poor policies.

Climate change will likely have a profound impact on the hydrologic cycle. Experts predict that wet regions are likely to become wetter (increasing the likelihood of floods) and that dry regions will likely become drier (increasing the likelihood of droughts, food insecurity, environmental degradation, and reduced water availability for human consumption). Rising sea levels increase the risk of storm surges, flood damage, and saltwater intrusion into freshwater supplies. Changing hydrologic

conditions may undermine countries' abilities to comply with long-standing treaty regimes for managing shared waters. Recommended responses include reducing the energy costs of water management; building resilience into water and sanitation activities and infrastructure; addressing water quality and health; increasing water-related disaster preparedness; fostering cooperation on shared waters; sharing advances in science and technology; and improving water resources planning and management.

Insufficient quantities and quality of freshwater resources threaten to reduce the global food supply by more than 10 percent in the next 25 years. Aquifer depletion, salinization of soils, and the reallocation of agricultural water to other sectors and users will combine to limit irrigated crop production and lead to food insecurity, particularly for the poorest. Changes in precipitation and heat levels are also projected to diminish agricultural productivity, further threatening food security. Studies suggest that at least 20 percent more irrigation water will be needed by 2025 to meet projected food demand in developing countries. Because many developing countries depend heavily on rainfed agriculture, they are particularly vulnerable to changes in precipitation patterns and droughts. Recommended responses include increasing water storage and conservation; increasing the efficiency of water use; improving forecasting; and enhancing the ability of crops to adapt to and moderate the effects of a changing environment.

This report reflects the input of more than 14 U.S. Government Agencies and Departments and complements work by other U.S. Government agencies to address international water and sanitation issues. (See the USAID 2008 annual report on water—expected August 2009—for a review of USAID programmatic activities in 2008.) In support of the WfP Act, USAID has developed guidelines and conducted training to build the capacity of field staff, and many U.S. agencies have integrated the goals of the WfP Act into their own plans and strategies. The DOS and USAID continue to consult broadly with other agencies and donors and to strengthen interagency coordination and consultations with nongovernment experts on emerging priorities. The United States will continue to build on these relationships as we implement the WfP Act and work towards a more water-secure world.

CHAPTER ONE

Introduction

The Senator Paul Simon Water for the Poor Act of 2005 (the WfP Act) was signed into law on December 1, 2005. The Act emphasizes the provision of affordable and equitable access to safe drinking water and sanitation in developing countries as a key component of U.S. foreign assistance programs. It requires the Secretary of State, in consultation with the U.S. Agency for International Development (USAID) and other U.S. Government agencies, to develop and implement a strategy “to provide affordable and equitable access to safe water and sanitation in developing countries” within the context of sound water resources management. It also requires the Secretary of State, in consultation with the USAID Administrator, to submit an annual report to Congress describing changes in the U.S. strategy and progress in achieving the objectives of the WfP Act.

1.1 Overview of the Report

This is the fourth report to Congress since the passage of the WfP Act. Implementation of the WfP Act is an evolving process. Each report represents a snapshot at a particular point in time that should be interpreted within the broader context of previous reports and overall U.S. efforts on water and sanitation. The basic elements of the U.S. strategy on water and sanitation have been well described in previous reports to Congress.¹ In addition to the financial reporting that has become standard, this report builds on these past reports in two important ways. First, we include—for the first time—country-level plans for a representative few countries where the United States is active. Our intention is to expand the number of countries covered in the future, providing U.S. goals and objectives on water and sanitation, areas of U.S. investment, and indicators for measuring and tracking

progress on a country-by-country basis for each of the U.S. priority countries. Second, building on the joint USAID/Department of State (DOS) Framework for Action on Water and Sanitation,² we outline key approaches the United States will consider in responding to specific goals of the WfP Act and emerging challenges. Included are special sections on expanding access to drinking water and sanitation to the poorest populations, responding to climate change, and improving water management to meet increasing food production needs. The approaches identified reflect expert input from a broad range of stakeholders, both inside and outside the U.S. Government.

1.2 The Global Water and Sanitation Challenge

Water is essential for human health, economic growth and food security, and environmental sustainability. Lack of access to appropriate sanitation increases disease, undermines human dignity, and disproportionately impacts women and girls over men and boys. Healthy people, productive livelihoods, individual and collective dignity, peace, and security depend on sustainable access to clean water and sanitation.

Progress is being made in achieving the internationally agreed goals on water and sanitation.³ Today, 87 percent of the world’s population uses drinking water from an improved source⁴—a 10 percent increase since 1990. Sixty-two percent⁵ have access to improved sanitation—an 8 percent increase since 1990.

Despite this progress, much more remains to be done. Today, one person in eight⁶ lacks access to an improved

¹ Past reports to Congress for 2006, 2007, and 2008 are available at www.state.gov/g/oes/water.

² Published as Annex A in the 2008 Report to Congress.

³ “[T]o halve, by the year 2015, the proportion of people unable to reach or afford safe drinking water...” (Millennium Declaration, New York, 2000) and “[T]o halve, by the year 2015, the proportion of people without access to basic sanitation...” (Johannesburg Plan of Implementation, Johannesburg, 2002).

⁴ Joint Monitoring Programme (JMP), *Progress on Drinking Water and Sanitation: Special Focus on Sanitation*, 2008.

⁵ Ibid.

⁶ International Water Centre, *Meeting the Sanitation and Water Challenges in South-East Asia and the Pacific*, 2009, iii.

drinking water source; 40 percent of the world's population⁷ lacks access to improved sanitation. In Sub-Saharan Africa, more than 19 percent of the urban and 54 percent of the rural population lack access to an improved drinking water source. In Asia, more than 500 million people practice open defecation.⁸ If present trends continue, the world will not meet the international goal on sanitation.

Numbers tell only part of the story. Dirty water spreads diarrheal disease, typhoid, polio, guinea worm disease, schistosomiasis, Hepatitis A and E, and cholera. Inadequate access to safe water and sanitation contributes to undernourishment, a major factor in child deaths. Inadequate access also impedes economic growth, as measured by the cost of water-related disease, lowered worker productivity, reduced school attendance, environmental degradation, and stunted agricultural development. Finally, distant access to water supply disproportionately impacts women and girls, who often forgo other economic or educational opportunities to collect water for the family.

Population growth and changing consumption patterns will exacerbate the global water and sanitation challenge. By 2020, global water use is expected to increase by 40 percent. Two out of three people could be living under conditions of water stress by 2025,⁹ and 1.8 billion people could be living in regions with absolute water scarcity.¹⁰ The lack of water is expected to reduce food productivity by 10 percent by 2030. Regions may experience greater hydrological variability, more droughts, and more floods as a result of climate change. As demands increase and conditions change, tensions over shared water resources, both within and among countries, are likely to grow.

1.3 U.S. Government Response

The United States is dedicated to improving the lives of people around the world. U.S. water activities directly contribute to the achievement of U.S. foreign assistance goals by protecting human health, promoting economic development and food security, advancing peace and security, and providing basic needs in response to natural and human-made disasters. To achieve those goals,

the United States is working with countries around the world to achieve water security—defined as reliable and sustainable access to an acceptable quantity and quality of water to meet human, livelihood, ecosystem, and production needs while reducing the risks from extreme hydrological events to people, the environment, and livelihoods.¹¹

To achieve water security, the United States makes direct investments in infrastructure; works to strengthen the enabling environment in developing countries through capacity building, strengthening local and regional institutions, and promoting policy and regulatory reform; seeks to raise the political will to address water and sanitation issues at the national and global level; and engages in the dissemination of best practices and proven technologies. These activities are focused on achieving three objectives:

- Increasing access to safe drinking water and sanitation, and promoting better hygiene;
- Improving water resources management; and
- Increasing the productivity of water resources. (See Box I.)

The United States is committed to investing in ways that achieve the greatest sustainable impact. A number of factors can influence the sustainability, efficiency, and effectiveness of U.S. investments in water and sanitation. Project design is critical. Any single water or sanitation challenge must be addressed within the broader context of water use and development. Integrated water resources management is the only way to ensure long-term sustainable access to sufficient and affordable quantities of water for human, economic, and environmental uses. Moreover, development challenges are interconnected. Just as access to drinking water and sanitation supports a broad array of development goals (such as improved health, peace and security, political and social progress, economic growth, and poverty reduction), other development activities directly or indirectly support increased access to drinking water and sanitation services. For example, progress toward good governance and democratic accountability bolsters the public, private, and civil society institutions

⁷ International Water Centre 2009, iii.

⁸ JMP 2008.

⁹ Pacific Institute, *The World's Water 2008–2009*, Chapter 1.

¹⁰ Ibid.

¹¹ See the 2008 *Report to Congress on the Implementation of the Senator Paul Simon Water for the Poor Act of 2005* for a more detailed description of the strategic principles guiding U.S. efforts on water.

needed to resolve conflicts, maintain support for public and private efforts, and sustainably manage local water resources. Job creation and economic growth, together with strengthened fiscal management, help generate the

BOX 1. U.S. GOVERNMENT OBJECTIVES ON WATER AND SANITATION*

1. **Increasing access to water supply and sanitation, and promoting better hygiene** (includes both short-and long-term sustainable access to safe water and adequate sanitation, as well as activities to improve hygiene).

***Illustrative activities:** Strengthening the capacity of small-scale service providers; improving operations and financial sustainability of drinking water and sanitation services utilities; mobilizing capital for expanding and rehabilitating infrastructure; and improving household- and community-level hygiene and sanitation*

2. **Improving water resources management** (includes optimizing the benefits of drinking water among competing uses while ensuring that human needs are met and environmental resources are protected, as well as supporting regional efforts to manage and/or adapt to hydrological variability and the risks of floods and droughts).

***Illustrative activities:** Improving water resources planning; addressing water quantity and quality challenges; strengthening participatory governance; mobilizing financing; and managing hydrologic variability*

3. **Increasing water productivity** (includes maximizing the efficient and productive use of water used in industrial, agricultural, and other consumptive sectors, as well as supporting pollution prevention programs and other programs that reduce water losses).

***Illustrative activities:** Improving water use efficiency in agriculture; helping countries adapt to hydrologic variability and climate change; reducing water pollution by industry; and improving water use efficiency in cities*

* In 2008, the DOS and USAID developed a joint strategic framework to facilitate efforts by embassies and USAID missions abroad to develop activities within their host countries. The above is abstracted from the framework and previous reports to Congress.

resources needed to sustain both local capital investment and maintenance of water and sanitation infrastructure. Complex development challenges cannot be successfully overcome in isolation. Rather, they require a broad set of interventions that create the enabling environment for sustainable progress.

U.S. activities on water and sanitation are part of an overall country plan designed to support the development of a specific country. These plans are made in consultation with the host country and take into account a number of factors, including the level of need, the enabling environment (conditions on the ground that will support long-term sustainable results), the U.S. comparative advantage (versus that of other bilateral and multilateral donors), and opportunities to leverage U.S. foreign assistance through partnerships and similar mechanisms with other donors and partners. Other factors include consistency with U.S. foreign policy priorities and compliance with statutory directives that affect foreign assistance allocations. Considering these factors, 31 countries have been identified as priority countries for U.S. water and sanitation activities (see Table 1).

The DOS, USAID, and many U.S. Government agencies have taken steps to strengthen our individual and collective capacities to address international water and sanitation challenges. The DOS and USAID have continued to consult broadly with other agencies and donors and have co-hosted workshops to strengthen inter-agency coordination and seek outside expert advice on key issues or emerging priorities. USAID has developed guidelines and conducted training to build the capacity of field staff to effectively develop and implement water and sanitation activities. And many U.S. agencies have integrated the goals of the WfP Act into their own functions, reflecting the greater attention given by the U.S. Government to water and sanitation issues.

TABLE 1. PRIORITY COUNTRIES FOR U.S. WATER AND SANITATION ACTIVITIES, FY 2009

Sub-Saharan Africa		Asia and the Pacific	Europe and Eurasia	Latin America and the Caribbean	Middle East and North Africa
Democratic Republic of the Congo	Mozambique	Afghanistan	Armenia	Haiti	Iraq
Ethiopia	Nigeria	Bangladesh	Georgia		Jordan
Ghana	Senegal	Cambodia	Kosovo		Lebanon
Kenya	Somalia	India			West Bank/Gaza
Liberia	Sudan	Indonesia			
Madagascar	Tanzania	Pakistan			
Mali	Uganda	Philippines			
	Zambia	Timor-Leste			

U.S. Support for Water and Sanitation

In FY 2008, the United States obligated more than \$1 billion in support of water- and sanitation-related activities in developing countries (excluding Iraq¹²). Of that amount, more than \$815 million was obligated in 95 countries around the world to support activities that improve access to safe drinking water and sanitation and promote hygiene. This represents 3 percent of overall U.S. foreign assistance. Investments in Sub-Saharan Africa increased to \$648.7 million in FY 2008 (in large part due to the implementation of projects under Millennium Challenge Corporation Compacts signed in FY 2007). The United States is one of the largest bilateral donors to water supply and sanitation efforts in developing countries, accounting for 10 percent of all official assistance to the water and sanitation sector in 2006–2007.¹³ The United States is also one of the largest donors to several multilateral development banks (e.g., the World Bank, the African Development Bank, and the Inter-American Development Bank) and intergovernmental organizations (e.g., the UN agencies, the Global Environment Facility), which collectively provided nearly \$5 billion for water- and sanitation-related activities in 2008.

As described in earlier reports to Congress, U.S. investments have focused on capacity building, institutional strengthening, policy/regulatory reform, diplomatic engagement, direct investment in infrastructure, and improving science and technology. As a result of those investments, millions of people have gained improved access to safe drinking water and sanitation; water resources are being managed more wisely and productively; and many countries and communities are enjoying greater water security. In 2008, U.S. Government-sponsored programs resulted in more than 4.6 million people gaining first-time access to an improved water

source, and more than 2.1 million gaining first-time access to basic sanitation.

USAID and the Millennium Challenge Corporation (MCC) provided over 95 percent of U.S. foreign assistance for international water and sanitation programs. Several other agencies and departments provided additional support—the DOS, the Peace Corps, and the Department of Defense’s Combatant Commands (COCOMs). Details on this support are below. Funding support by other U.S. agencies was small in comparison. Many, however, made significant non-financial contributions. These activities are summarized in Chapter 3.

2.1 U.S. Government Agencies

U.S. Agency for International Development

USAID is the lead U.S. Government foreign assistance agency responsible for development and humanitarian assistance programs. In FY 2008, USAID obligated \$489.6 million for water- and sanitation-related activities in 75 countries. Obligations for sustainable water supply, sanitation, and hygiene increased 45 percent over FY 2007 and represented 79.6 percent of overall water-related obligations (see Table 2). As a result of USAID investments, more than 7.7 million people received improved access to safe drinking water, and nearly 6.3 million received improved access to sanitation. Of these, more than 4.6 million received first-time access to an improved drinking water source and more than 2.1 million to improved sanitation. USAID-sponsored activities to improve the quality of water at its point of use resulted in more than 7.4 billion liters of disinfected drinking water. (See Annex B, Table B.4, for a complete breakdown of results by country.)

¹² Since 2005, the U.S. Government has invested over \$1,930.5 million in water and sanitation in Iraq. Of this amount, nearly 70 percent went to projects providing potable water. Those funds have supported hundreds of activities in the water and sanitation sector, such as construction and rehabilitation of water treatment plants and facilities and rehabilitation of sewage treatment plants. Most projects were completed in early FY 2008.

¹³ Based on Organisation for Economic Co-operation and Development (OECD), “Measuring Aid to Water Supply and Sanitation,” 2009. See <http://www.oecd.org/dataoecd/2/60/42265683.pdf>.

TABLE 2. ESTIMATED USAID WATER OBLIGATIONS IN FY 2008, BY REGION (millions of dollars)

	Sub-Saharan Africa	Asia and the Pacific	Middle East and North Africa	Europe and Eurasia	Latin America and the Caribbean	Central Programs	Total
Water Supply, Sanitation, and Hygiene	173.8	69.3	95.7	7.0	24.4	19.7	389.9 (79.6%)
Water Resources Management	12.7	24.0	8.4	0.8	10.0	2.7	58.6 (12.0%)
Water Productivity	25.1	3.8	2.9	0.8	2.1	4.2	38.9 (7.9%)
Total	211.7	97.1	107.0	8.6	36.5	28.7	489.6

Notes: FY 2008 budget data represent best estimates from USAID analysis of information as of May 2009. In FY 2008, the regional bureau “Asia and Near East” split into two regional bureaus, “Asia” and “Middle East.”

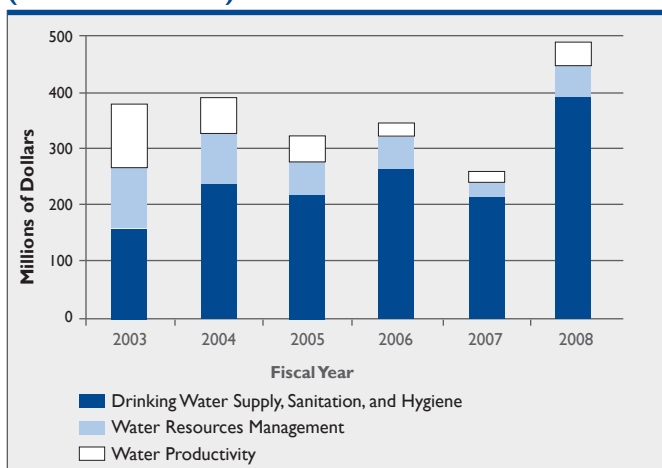
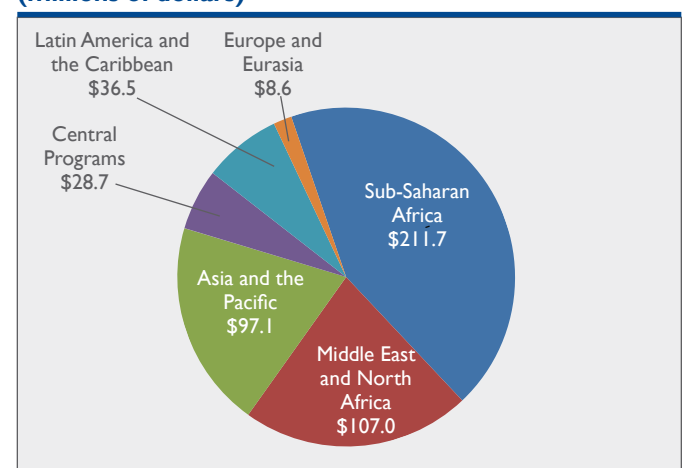
Source: USAID.

Overall, USAID obligations for drinking water supply, sanitation, and hygiene reached their highest levels in more than six years (see Figure 1). Resources committed to water resources management and water productivity increased over FY 2008 but remain a very small percentage of overall support for water and sanitation.

Funding support to the Sub-Saharan Africa region nearly doubled over the previous year and now represents 43 percent of total USAID support—more than to any other region (see Figure 2).

The 2008 Department of State, Foreign Operations, and Related Programs Appropriations Act required that

“[N]ot less than \$300,000,000 shall be made available for safe drinking water and sanitation supply projects, including water management related to safe drinking water and sanitation, only to implement the Senator Paul Simon Water for the Poor Act of 2005 (Public Law 109-121)...” The 2008 Report to Congress outlined the guidelines for obligating these funds. USAID exceeded this requirement, obligating more than \$300 million for programs related to safe drinking water, sanitation, and hygiene in FY 2008.¹⁴ A country-by-country breakdown of USAID drinking water supply and sanitation activities can be found in Annex B.

FIGURE 1. USAID OBLIGATIONS FOR WATER AND SANITATION BY THEME, FY 2003–FY 2008 (millions of dollars)**FIGURE 2. USAID OBLIGATIONS FOR WATER AND SANITATION BY REGION, FY 2008 (millions of dollars)**

¹⁴ This includes projects supported with International Disaster Assistance funds that met the guidelines specified in the 2008 Report to Congress.

TABLE 3. MCC FY 2008 WATER-RELATED ACTIVITIES (millions of dollars)

Country	Activity	Commitments in FY 2008 ¹			Obligations in FY 2008 ²		
		Drinking Water Supply, Sanitation, and Hygiene	Water Resources Management	Increased Productivity	Drinking Water Supply, Sanitation, and Hygiene	Water Resources Management	Increased Productivity
Burkina Faso	Irrigated agriculture	—	5.4	86.0	—	—	—
	Latrines and boreholes for schools and teacher facilities ³	1.2	—	—	—	—	—
	Improved water efficiency in agriculture ⁴	—	—	4.5	—	—	—
Mongolia	Irrigated agriculture ⁵	—	—	3	—	—	3
Tanzania	Non-revenue water-reduction activity	36.2	—	—	36.2	—	—
	Plant expansion	24.5	—	—	24.5	—	—
	Water supply	5.6	—	—	5.6	—	—
Lesotho	Rural water and sanitation	(Committed in FY 2007)			30.2	—	—
	Urban and periurban water infrastructure	(Committed in FY 2007)			42.1 ⁶	—	—
	Metolong Dam bulk water conveyance system	(Committed in FY 2007)			86.8	—	—
	Wetlands restoration and conservation	(Committed in FY 2007)			—	5	—
Morocco	Irrigated agriculture	(Committed in FY 2007)			—	—	109.9 ⁶
Mozambique	Construction/reconstruction of wells and boreholes	(Committed in FY 2007)			9.0	—	—
	Rehabilitation/expansion of municipal sanitation and drainage	(Committed in FY 2007)			82.5	—	—
	Rehabilitation/expansion of water supply systems	(Committed in FY 2007)			91.1 ⁷	—	—
	Technical assistance for utility management	(Committed in FY 2007)			21.0	—	—
FY 2008 Total		67.5	5.4	93.5	429.0	5.0	112.9
Grand Total		166.4			546.9		

¹ Commitments are based on Compact signing. ² Obligations are based on Entry into Force. ³ Portion of \$28.8 million BRIGHT 2 School Program.

⁴ Portion of \$36.5 million Diversified Agriculture Project. ⁵ Approximate portion of \$5.9 million periurban land project. ⁶ The obligated amount reflects a slightly higher amount than was committed in FY 2007. ⁷ \$11.7 million was listed under "Water Resources Management" in last year's report, but should have been included in "Drinking Water Supply, Sanitation, and Hygiene."

Source: MCC.

Millennium Challenge Corporation

The MCC is founded on the principle that aid is most effective when it reinforces good governance, economic freedom, and investments in people. The MCC does not prioritize sectors for investment but instead provides support to projects and programs in eligible countries based on country-identified priorities. Countries are responsible for developing programs and then implementing them in accordance with a "Compact" negotiated with the MCC. Water-related activities are frequent components of these agreements. The MCC commits funds at Compact signing and then obligates these funds for the entire Compact when it enters into

force. Disbursements are then made over the life of the Compact, which can last up to five years.

In FY 2008, the MCC obligated \$546.9 million to the water and sanitation sector (see Table 3), a significant increase from FY 2007. Nearly 80 percent (\$429.0 million) of the total was obligated for safe drinking water and sanitation projects. In addition, the MCC committed \$166.4 million for water and sanitation activities in Burkina Faso, Mongolia, and Tanzania. Forty-one percent of these new commitments are for drinking water and sanitation projects; 98 percent are directed towards urban areas.

Peace Corps

Through its community-level presence, the Peace Corps continues to raise awareness of the importance of clean water and sanitation and to facilitate small-scale infrastructure projects (e.g., rainwater catchments, manually drilled wells, gravity-flow aqueducts). In 2008, Peace Corps volunteers, working alongside members of their communities, helped over 119,000 people gain access to water systems and 54,000 people gain access to latrines. The majority of water and sanitation activities took place in Africa (Ghana and Mali) and Latin America (Bolivia, Honduras, Jamaica, Paraguay, Dominican Republic, Peru, and Panama). In addition, Peace Corps volunteers reached nearly 60,000 beneficiaries with hygiene education messaging.

The United States' Combatant Commands

Humanitarian assistance units of the Combatant Commands frequently partner with poor communities to support construction of water and sanitation infrastructure. Projects are initiated and implemented in collaboration with national ministries, the United States Geological Survey (USGS), U.S. embassies, the U.S. Army Corps of Engineers (USACE), and the Navy's Facilities Engineering Service Center. In 2008, the combined Joint Task Force—Horn of Africa Civilian Affairs Program constructed or repaired 41 wells in nine African countries and hosted workshops to build the capacity of government partner organizations in water resources management, data gathering, hydrologic modeling, and remote sensing. The U.S. Pacific Command constructed several water systems and sanitation facilities in Bangladesh, Indonesia, Palau, and the Philippines, and constructed or upgraded water catchment systems and septic systems/

sanitary facilities in all infrastructure activities (e.g., constructing schools and health clinics). Finally, the U.S. Southern Command completed six water treatment projects and 16 well-digging projects in nine countries of the region, and supplied water and sanitation facilities in response to disasters in Haiti, Suriname, and Paraguay and for internally displaced persons in Brazil.

2.2 Support to Intergovernmental Organizations

The United States contributes to a number of international organizations that support water and sanitation projects around the world, as well as water and sanitation services in the context of emergency relief. These include several UN agencies, detailed in Table 4.

Through the DOS's Bureau of Population, Refugees, and Migration (PRM), the U.S. Government is the largest bilateral donor to international humanitarian organizations such as the United Nations High Commissioner for Refugees (UNHCR), International Committee of the Red Cross (ICRC), and United Nations Relief and Works Agency (UNRWA). PRM also supports non-governmental organizations (NGOs) in filling critical gaps in humanitarian response. Through the Migration and Refugee Assistance and Emergency Refugee and Migration Assistance accounts, PRM provided over \$1.1 billion to international and NGO partners for multisectoral protection and assistance programs with refugees, stateless populations, vulnerable migrants, and other populations of concern. PRM closely monitors its partners to ensure that beneficiaries have access to water and sanitation at or above internationally recognized standards. In collaboration with the Centers for Disease Control and Prevention (CDC) International

TABLE 4. ESTIMATED U.S. FINANCIAL SUPPORT FOR SELECTED INTERNATIONAL ORGANIZATIONS, FY 2008

Organization	U.S. Contribution to Core Budget (millions of dollars)	Percentage of Core Budget Spent on Water
United Nations Children's Fund	128.0	8%
World Health Organization	106.5	1.7%
United Nations Education, Scientific, and Cultural Organization	80.8	1.4%
World Meteorological Organization	11.0	4.6%
United Nations Environment Program	5.8	5.7%
Food and Agriculture Organization of the United Nations	103.5	1.0%
United Nations Development Programme (UNDP)	108.0	7.5%
Total	543.6	

Note: The United States does not fund water programs directly through its core contributions to these international organizations, although a percentage of this contribution is spent on water-related programs. These budget estimates do not include additional voluntary contributions made by other donors to carry out specific water-related interventions around the world.

Source: Department of State.

Emergency and Refugee Health Branch, PRM also supports capacity-building efforts of partners to address water, sanitation, and hygiene issues among vulnerable populations. Because programs are inherently multisectoral, funds are not specifically earmarked for water and sanitation. In FY 2008, some of the largest PRM contributions were made to UNHCR (\$490.3 million), ICRC (\$228.2 million), UNRWA (\$184.6 million), and NGOs (\$138 million).

2.3 Support for Multilateral Development Banks

The United States is a member of, makes financial contributions to, and exercises leadership in seven multilateral development banks that support water and sanitation projects around the world. In FY 2008, the multilateral banks provided more than \$4.2 billion in water- and sanitation-related financing (see Table 5).

In FY 2008, the U.S. Environmental Protection Agency (EPA) awarded \$14.8 million to the Border Environment Cooperation Commission and the North American Development Bank for work in the U.S.-Mexico

border area. In 2008, previously obligated funds provided safe drinking water to 5,162 homes in the U.S.-Mexico border area that lacked access to safe drinking water. The funds also provided adequate wastewater sanitation service to 31,686 homes in the U.S.-Mexico border area that lacked access to wastewater sanitation.

TABLE 5. ESTIMATED WATER-RELATED FINANCING FROM MULTILATERAL DEVELOPMENT BANKS, FY 2008

Organization	Amount (millions of dollars)
World Bank Group	2,359.9
African Development Bank	364.8
Asian Development Bank	461.5
Inter-American Development Bank	797.0
North American Development Bank	6.0
European Bank for Reconstruction and Development	166.0
Global Environment Facility	102.0
Total	4,257.2

Source: Department of Treasury.

CHAPTER THREE

Implementing the U.S. Strategy on Water and Sanitation

Previous reports to Congress and the joint USAID/ DOS Framework for Action provide broad guidance to embassies and USAID missions for implementing the U.S. strategy on water and sanitation. The intent of this chapter is to outline specific responses at the global, regional, and country level to implement this strategy, understanding that the majority of U.S. resources are programmed at the country level. See Annex B for USAID's investments by country and program area.

3.1 Regional- and Country-Level Implementation

The 2008 Report to Congress included strategies outlining goals, approaches, and expected outcomes for each region. The following sections build on these regional strategies by describing representative programs the United States is implementing to achieve these goals. Detailed country plans—which include results for FY 2008 and indicators for tracking and measuring progress—are abridged here and presented in full in Annex A.¹⁵

¹⁵ For a complete list of USAID activities, please refer to “Investments in Drinking Water and Sanitation Supply Projects and Related Water Resources Activities: 2008 Annual Report.”

Sub-Saharan Africa

The Regional Challenge

Sub-Saharan Africa is not on track to meet the internationally agreed goals on water or sanitation. Over 340 million Africans lack access to safe drinking water, and almost 500 million lack access to improved sanitation. High population growth rates, rapid urbanization, and insufficient renewable water resources confound progress. Contaminated water and inadequate sanitation and hygiene threaten the health of people throughout the continent; diarrhea alone leads to nearly half of all deaths among children under five. Sub-Saharan Africa's varied geography creates a diversity of challenges and a demand for sound management of hydrologic variability. For example, while the Horn of Africa and southern Africa suffer from low levels of precipitation, West and Central Africa face frequent flooding. Most of the fresh surface water resources of Sub-Saharan Africa are in transboundary river and lake basins. U.S. development activities in Sub-Saharan Africa must balance water and sanitation challenges with other development challeng-

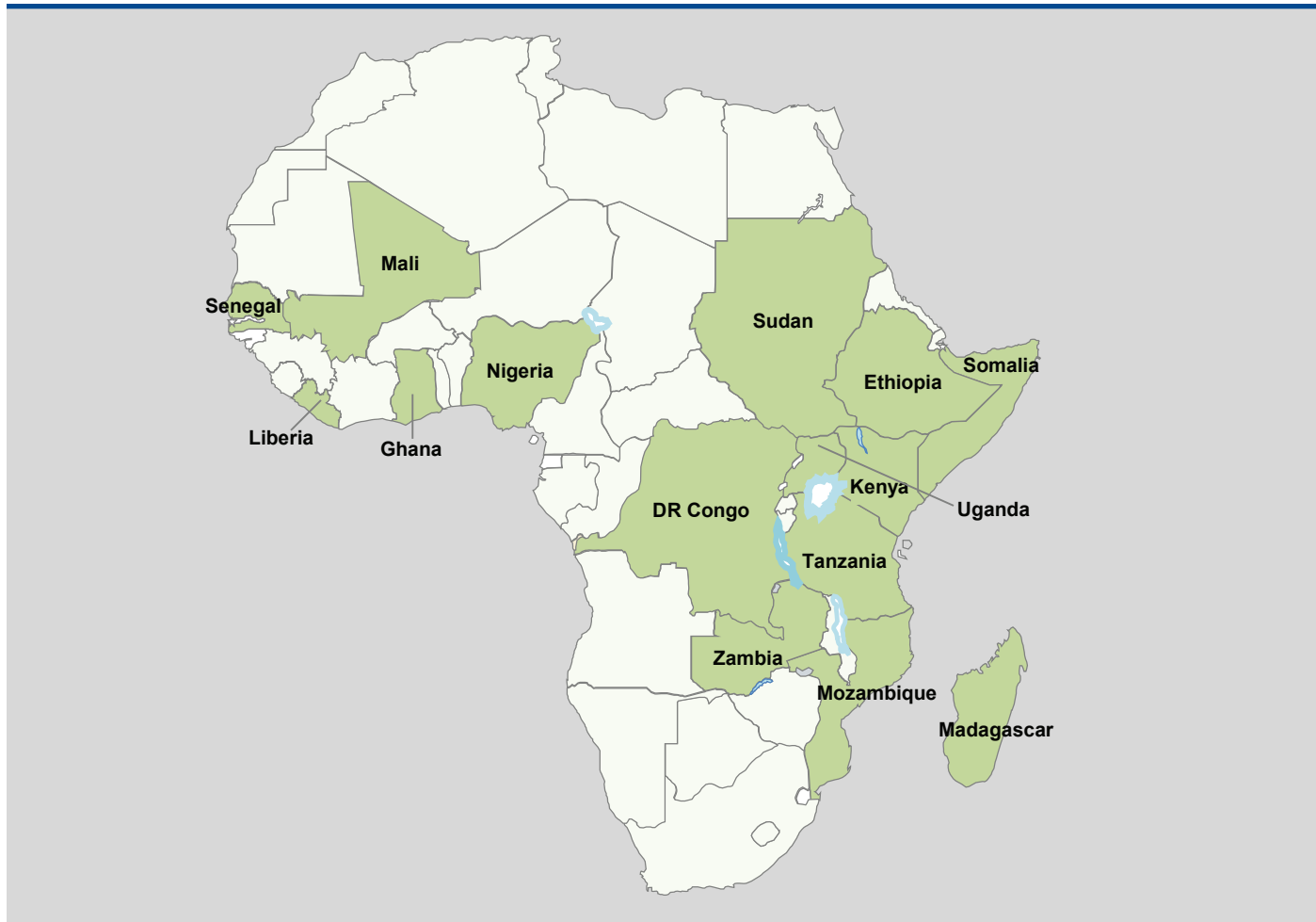
es, including infectious diseases, poor governance, food insecurity, and poverty.

The Regional Approach

U.S. efforts in Africa at the regional level focus on supporting pan-African partnerships to increase access to safe drinking water and sanitation, strengthening utilities to improve the delivery of water services, improving the management of shared waters at the basin level, and developing the capacity of water resource managers. Examples of such regional efforts include:

- **West Africa Water Initiative (USAID):** Expands access to safe water and sanitation by rehabilitating rural water systems, promoting demand for low-cost sanitation, and fostering self-supply models of water service provision in Ghana, Mali, and Niger. The multi-donor partnership includes the Hilton Foundation, World Chlorine Council, and UNICEF.

FIGURE 3. PRIORITIES FOR SUB-SAHARAN AFRICA



- **Transboundary Water for Biodiversity and Human Health in the Mara River Basin (USAID):** Expands access to safe water and sanitation by strengthening water user associations in the Mara River Basin of East Africa. Assistance is provided through a combination of direct service provision and implementation of a water credit program that helps communities access credit through local lending institutions.
- **Guinea Worm Eradication Program (CDC):** Advocates for the provision and rehabilitation of safe sources of drinking water and provides technical and laboratory support to Guinea Worm Eradication Program partners.
- **The Nile Basin Initiative (DOS, National Aeronautics and Space Administration [NASA], USAID):** The United States, along with partners, is working to ensure the sustainable and cooperative management of the Nile Basin. U.S. support is directed towards the development of a joint framework agreement for cooperatively managing the basin's water resources and improving management of the basin's water resources.
- **Zambezi River Basin Initiative (USACE):** Builds capacity among basin stakeholders on integrated water resources management, including environmental flow management, conjunctive dam management, and emergency preparedness. The Initiative will also promote transboundary cooperation and communication in developing a shared water resources vision, which is crucial to the socioeconomic development and stability of the eight basin nations.

Country-Level Summaries

U.S. priority countries in Sub-Saharan Africa are highlighted in Figure 3. Abridged plans for each country are provided below, and detailed plans for asterisked countries are provided in Annex A.

Democratic Republic of the Congo (DRC): Public health conditions are very poor in the DRC; one out of every five children does not reach the age of five years. The U.S. Government will thus coordinate activities promoting access to water and sanitation with health-related assistance activities (for example, integrating the provision of water into efforts to treat or reduce HIV/AIDS and malaria). The U.S. Government will focus its efforts geographically on rural areas, and demographically on vulnerable populations, such as people living with HIV/AIDS and children under five. Access to potable water will be increased via point-of-use water treatment and the construction of boreholes and wells.

The United States will consider engaging in public-private partnerships in FY 2009.

Ethiopia*: U.S. efforts in Ethiopia will focus on increasing access to safe water supply, improving sanitation, and promoting better hygiene in rural communities through existing structures such as village associations and schools, with a particular focus on pastoral areas. U.S. efforts will be coordinated with those of the Government of Ethiopia and other donors to implement the country's Water Sector Development Program. Water treatment systems and water vessels will be distributed to HIV-positive people to reduce their morbidity and mortality. To address the immediate needs of local populations affected by drought and to reduce vulnerability to future insecurities, U.S. disaster assistance will include providing safe drinking water, latrine construction and maintenance, hygiene education, and a countrywide rapid-response program focused on small-scale emergencies. The United States will also provide support to the Geological Survey of Ethiopia.

Ghana: The U.S. Government will focus efforts on three goals: increasing the availability and quality of potable water; improving disposal of human and other waste, and increasing understanding of the link between safe water and sanitation practices and health-related outcomes. After a comprehensive assessment of ways to maximize programming of water and sanitation activities within the overall country program, the United States will focus its efforts on the promotion of potable water in rural community health zones and primary schools, community-led approaches to adequate waste disposal, and community engagement in managing water and sanitation resources.

Kenya: U.S. efforts in Kenya are expected to increase access to water supply and sanitation services among the poorest communities; reduce the prevalence of water-related diseases; promote sustainable management of water resources; and improve the resilience of vulnerable populations to the impacts of climate change. Assistance will be directed to providing and/or improving the provision of water and sanitation services to drought-prone arid and semiarid lands, where 80 percent of Kenyans reside. Activities include point-of-use water treatment programs for persons with HIV/AIDS and integration of household water treatment with other child survival programs. The United States will also work with the World Bank to develop partial credit guarantees to increase lending to small water enterprises, thereby increasing the availability of water to populations underserved by current markets.

Liberia: Liberia's recovery from a decade-long civil war will require multifaceted efforts aimed at improving access to water supply and sanitation and improving water resources management. The U.S. Government will provide potable water through a variety of means, such as installation or rehabilitation of water pumps, well drilling, point-of-use water treatment, or provision of affordable water supply and treatment in secondary cities, dense urban populations, and rural areas in six counties. The United States will also increase efforts to promote proper health and hygiene practices. Fundamental to managing water and sanitation services is data. To this end, the United States will support updating information on existing water points for the Ministry of Health and Social Works. Local governments and communities will be trained in water management best practices. When feasible, water and sanitation services will be integrated into existing health activities to maximize effectiveness.

Madagascar*: In view of the March 17, 2009, coup, all non-humanitarian assistance to Madagascar has been suspended, as has all assistance to the government (humanitarian and non-humanitarian). The United States is continuing some humanitarian assistance programs that are not directed to the government and that benefit the water and sanitation sector. U.S. assistance to the government will resume once a democratically elected government has been established. Within these constraints, the United States will scale up its water and sanitation program to increase sustainable access to improved drinking water supply and sanitation facilities for poor and vulnerable populations; stimulate private sector engagement for both products and services; and promote a more holistic understanding of the importance of healthy watersheds and clean water for human and ecosystem health. Priorities will include improved hygiene behavior, safe disposal of feces, safe storage and treatment of drinking water at point of use, and construction or rehabilitation of low-cost and small-scale water supply and sanitation infrastructure that can be operated and maintained at the village level. To improve water resources management, U.S. efforts will also focus on strengthening water users', water management, and women's associations.

Mali: The United States will integrate efforts to increase access to water and sanitation with education development activities, with the overall goal of increasing student retention. Leveraging private sector resources, the United States will provide potable water in rural areas and promote demand for sanitation. Finally, resources will build the capacity of water committees to address management of water resources.

Mozambique*: Nearly 15 million Mozambicans lack access to safe water. Outbreaks of cholera and diarrhea from unsafe water are prevalent, particularly in drought-prone areas. U.S. efforts aim to improve access to water supply and sanitation and improve hygiene in four northern provinces. Specific activities include rehabilitation of a critical water supply dam, other drinking water infrastructure, and sanitary and drainage systems; provision of technical support and capacity building; and support for a hygiene education program.

Nigeria*: U.S. efforts in Nigeria will focus on improving access to water and sanitation, promoting better hygiene, improving water and sanitation governance, and promoting sustainable financing for water supply services. This will include providing technical assistance and capacity building to state water boards and local governments; developing private-public partnerships and partial loan guarantees to secure additional funding for water- and sanitation-related projects; and supporting community coalitions, local government water and sanitation committees, and community-based organizations to articulate demand-side advocacy and develop capacity for maintenance and management of community-based water systems. Other activities include support for schools and health facilities to ensure they have adequate water and sanitation facilities, and a point-of-use water treatment program for HIV/AIDS patients and for integrated cholera response efforts.

Senegal: The Government of Senegal's *Programme d'eau potable et d'assainissement du millénaire* (PEPAM) provides a unified framework of interventions to improve access to water supply and sanitation. U.S. Government efforts support this framework by integrating water and sanitation activities across education, health, natural resource management, and conflict programs. In addition, the United States is launching a development grants program to promote integrated approaches to water and sanitation. Additional activities include small grants for water and sanitation infrastructure; provision of wells in conflict-affected areas; water management capacity-building in coastal areas; and reimbursement of the Government of Senegal for building wells in middle schools.

Somalia: Civil strife is having a substantial impact on water and sanitation. Water points have not been maintained, and responsibility for ownership of water sources is absent. U.S. efforts to increase access to water and sanitation will be integrated with assistance for basic education. Provision of drinking water and sanitation facilities and promotion of hygiene education

will be sustained by training water, environment, and sanitation committees in surrounding communities.

Sudan*: U.S. efforts to improve access to rural water supply and sanitation and promote better hygiene will focus in southern Sudan and the three areas of Abyei, Southern Kordofan, and Blue Nile. This will include working with community groups to provide and manage basic water and sanitation infrastructure and to foster behavior change in access to and use of these facilities. For urban water programming, U.S. efforts will focus on rehabilitation of water treatment plants and capacity building of the Urban Water Corporation in the economically important city of Wau. To transition from emergency relief efforts to sustainable delivery of water supply and sanitation, U.S. efforts will expand water supply and sanitation activities beyond primary healthcare facilities and will include community-based social marketing of point-of-use water treatment, sanitation, and health education messages on improving key hygiene behaviors. Other efforts will address sector systems strengthening, water, sanitation, and hygiene (WASH) governance at state and county levels, sector capacity issues, WASH sector investment sustainability, public, private, and community partnerships, the spare parts supply chain, and operations and maintenance with associated cost recovery.

Tanzania*: Using an approach that integrates natural resources management, rural development, and WASH, U.S. efforts in Tanzania will support sustainable management of water resource quantity and quality for domestic water supply and ecosystem services. In addition, the United States will increase sustainable access to

WASH services by poor rural and small town dwellers; increase the number and capacity of water user groups to design, manage, and take a leadership role in the long-term sustainable provision of safe and clean access to drinking water; increase access to sustainable financing for communities and entrepreneurs engaged in WASH activities; and support sustainable management of water resource quantity and quality for domestic water supply and ecosystem services. Efforts will focus on watershed assessments and protection, water supply and sanitation activities in schools, clinics, and communities, and water supply infrastructure improvements in Dar es Salaam and Morogoro.

Uganda: Development programs in Uganda will transition from humanitarian assistance to providing long-term services in northern rural areas and urban centers. To improve access to water supply and sanitation and promote better hygiene, the United States will extend the proven National Water and Sanitation Corporation contracting model into northern towns that have large internally displaced person populations.

Zambia: U.S. efforts in Zambia are twofold: to increase access to water and sanitation, particularly among school-aged children, and to increase water productivity. The U.S. Government will collaborate with the Ministry of Education to identify schools (and nearby communities) lacking in water and sanitation facilities. Health workers and caregivers providing maternal and child health interventions will be trained in water, sanitation, and hygiene messaging, and farmers will be trained in irrigation methods to increase water and agricultural productivity.

Asia and the Pacific

The Regional Challenge

Strong economic growth in the Asia and Pacific region in the past two decades has enabled an impressive increase in the number of people with access to drinking water—more than 400 million individuals in East Asia alone. In spite of the progress, more than 450 million people in the region still depend on unimproved drinking water sources, and 1.8 billion people lack access to sanitation—72 percent of all humans in this situation. Over 500 million people in the region practice open defecation. Access rates in the Pacific islands are especially low. Continued development and population growth will only increase demand for services, while climate change and pollution could adversely affect supply. Regional and international cooperation to manage changing water resources is likely to become more contentious.

The Regional Approach

U.S. efforts in Asia at the regional level are focused on increasing access to safe drinking water, sanitation, and hygiene; mobilizing finance from local and international

sources for water infrastructure investments; and improving water security through strengthened water resources management and transboundary cooperation. Examples of regional efforts in these focus areas include:

- **Water, Sanitation, and Hygiene Enterprise Development Program (USAID):** Supports market development and scale-up of household water treatment systems, as well as household sanitation and hygiene promotion, through public-private partnerships across the lower Mekong subregion.
- **Environmental Cooperation–Asia (USAID):** Promotes the “twinning” of utilities, municipalities, and financial institutions to expand and improve access. Together with the Asian Development Bank and the International Water Association, Environmental Cooperation–Asia (ECO-Asia) established the WaterLinks network to pair water operators in search of solutions with other operators who have addressed similar challenges.
- **Philippine Water Revolving Fund and Financial Institutions Reform and Expansion–Debt**

FIGURE 4. PRIORITIES FOR ASIA AND THE PACIFIC



Project (USAID): Mobilizes funding for infrastructure in the region, including the smaller and less creditworthy municipalities. The Philippine Water Revolving Fund, supported by the Governments of Japan and the Philippines, blends public and private funds to provide loans to water and sanitation projects. The Financial Institutions Reform and Expansion–Debt project helps Indian state governments mobilize resources for water and sanitation projects and helps cities improve the operations and management of water systems.

- **Mekong River Commission (USAID):** Strengthens the capacity of the Mekong River Commission Secretariat and member countries in transboundary conflict prevention. This is part of a broader effort to engage various initiatives that strengthen cooperative management of shared water resources throughout Asia.

Country-Level Summaries

U.S. priority countries in Asia and the Pacific are highlighted in Figure 4. Abridged plans for each country are provided below, and detailed plans for asterisked countries are provided in Annex A.

Bangladesh: U.S. efforts in Bangladesh are focused on increasing access to water and sanitation for the rural poor. The United States will support rehabilitation of existing wells and installation of new deep tube wells. Technical assistance will be provided for training in methods that mitigate arsenic contamination. Finally, the United States will mobilize community-level committees to raise awareness of the importance of clean water, adequate sanitation, and proper hygiene, and establish village sanitation centers that provide and distribute low-cost latrines.

Cambodia: U.S. efforts in Cambodia aim to improve access to water and sanitation facilities and improve hygiene in urban centers. This includes WASH promotion campaigns in Phnom Penh and facilitating city-to-city partnerships to transfer information and best practices on raising awareness of improved sanitation services. The United States will work with schools to provide latrines and water facilities, as only 65 percent of schools have latrines, and lack of proper sanitation is an important reason girls drop out of school. Through cooperation with the Mekong River Commission, the United States seeks to improve the management of shared water resources in the region. Finally, the United States will support efforts to develop alternatives to the use of freshwater, low-value fish for aquaculture.

India*: The United States will expand water, sanitation, and hygiene services to urban residents, especially to the poor; increase the productivity of water used for irrigation and power generation; and improve water resource management. U.S. activities will strengthen cities' capacity to maintain and operate their water and sanitation assets, help identify financing for new infrastructure, and promote good hygiene as part of a comprehensive diarrhea management program. Other activities encourage private partnerships that introduce more efficient technologies and the transition to crops that use fewer chemicals.

Indonesia*: To improve access to water supply and sanitation, the United States will support water delivery improvements, municipal water and sanitation planning, operator and management training, community-based demonstration projects, and incentives to stimulate financing. At the household level, the United States will encourage commercial entities to market point-of-use water treatment and public campaigns to promote hygiene. To address water resource management issues, the United States will expand opportunities for communities, NGOs, universities, and the private sector to participate in local management of water resources.

Pakistan*: U.S. investments in Pakistan will provide training in operations, maintenance, and management of water treatment units and drinking water sources; mobilize communities to develop cost recovery mechanisms; review technologies for water treatment and water quality testing; and increase access to and use of safe drinking water through introduction of point-of-use treatment technologies, hygiene education, and behavior change communication.

Philippines*: U.S. goals in the Philippines are to increase access to water supply and sanitation, promote better hygiene, improve water resource management, and improve water productivity. In urban areas, the United States will use a revolving fund to expand financing for water-related investments, address critical institutional and policy reforms in the water financing sector, improve water utility performance, increase capacity of local governments to improve sanitation, develop promotion campaigns, and twin utilities to share best practices. In conflict-affected areas, the U.S. funds the construction of community water supply systems. In high-biodiversity regions, the U.S. is employing a variety of strategies to improve watershed management, including the development of forest land use plans and the improvement of

solid waste management. In four large, diverse fisheries ecosystems, the U.S. is supporting an improved management system that increases their health and productivity.

Timor-Leste: The U.S. Government's comprehensive water and sanitation activities in Timor-Leste aim to build the capacity of district government offices to provide water and sanitation, promote hygiene, and integrate natural resources management with water and sanitation management. The United States will provide technological solutions to reduce waterborne diseases, mobilize communities to monitor water quality and promote hygiene, and protect water resources and watersheds through best practices in natural resource management. U.S. efforts will focus on rural areas with the greatest need, as measured by low access rates to water and sanitation.

Europe and Eurasia

The Regional Challenge

Water resources in Europe and Eurasia are unevenly distributed, both between and within countries. Access to water and sanitation is generally high, but coverage gaps still exist, especially in the rural areas of Eurasia, where 35 percent of people do not have access to improved sanitation. Throughout the region, highly deteriorated water utilities and neglected maintenance cause intermittent service and allow pathogens to enter from adjacent wastewater sources. Post-Soviet states' transition to market mechanisms has also created regional challenges. U.S. Government support for water and sanitation in Europe and Eurasia complements its commitment to achieving strong, market-oriented economies and open, democratic societies where the people have access to housing, nutrition, health care, and education.

The Regional Approach

U.S. efforts in Europe and Eurasia focus on promoting sustainable financing mechanisms for the region and rehabilitating water and sanitation infrastructure. One example of regional efforts in these focus areas is:

- **Private Enterprise Partnership for Southeast Europe—Infrastructure (PEPSE-I) (USAID):** Develops public sector projects for private sector investment. PEPSE-I operates as a revolving fund, recouping its project development expenses from private project investors as projects close. In late 2008, PEPSE-I secured private financing for a run-of-the-river small hydro investment project in Albania. In 2009, PEPSE-I will work with the Government of

Bulgaria to inject needed reforms into their public-private partnership legislation, then undertake two pilot water utility investment transactions based on these reforms. The partnership includes the International Finance Corporation and five European donors.

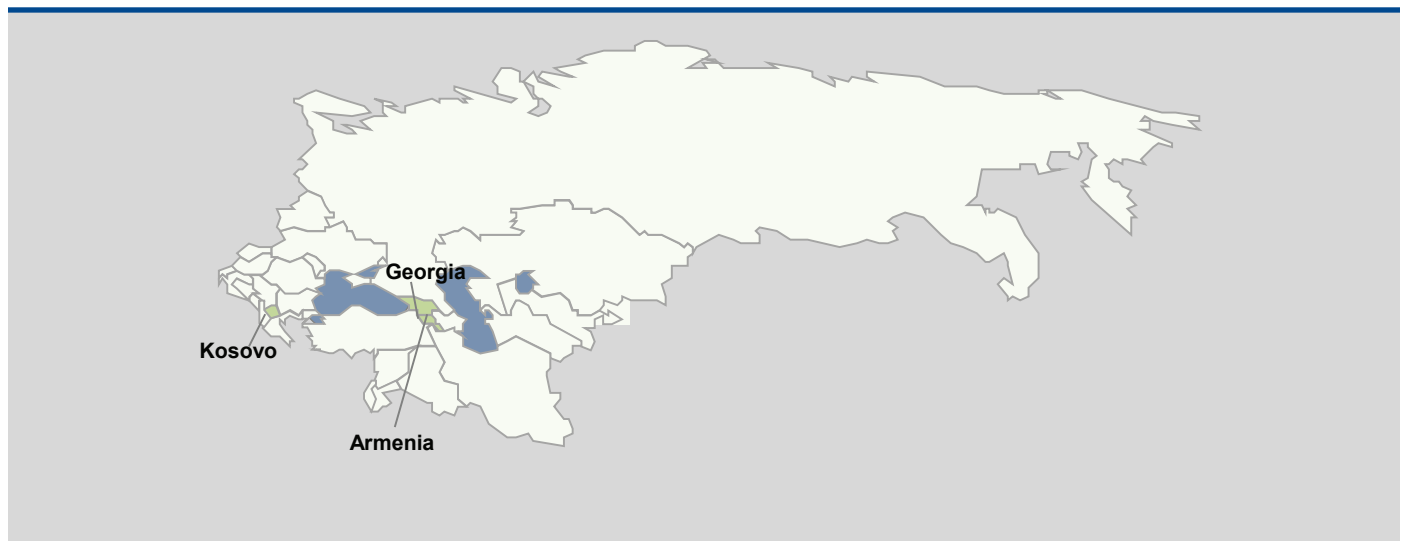
Country-Level Summaries

U.S. priority countries in Europe and Eurasia are highlighted in Figure 5. Abridged plans for each country are provided below, and detailed plans for asterisked countries are provided in Annex A.

Armenia*: Deteriorating water networks—some with up to 80 percent leakage—permeate Armenia. The U.S. Government supports direct rehabilitation of networks that provide potable water and/or water for agricultural use, with an indirect benefit of boosting farm productivity and profitability. The United States is the only donor supporting legal and regulatory reforms in Armenia, and it additionally supports the development of long-term capital finance mechanisms. To extend the reach of assistance, the United States has partnered with the Coca-Cola Corporation and UNDP to install a sewerage treatment plant to minimize pollution to the Aghstev River, and has partnered with local communities and other donor organizations to rehabilitate water networks that lie outside current service areas.

Georgia*: Georgia's highly deteriorated water supply networks cause major water losses. The United States supports infrastructure rehabilitation and development, capacity building, and technical assistance in crucial

FIGURE 5. PRIORITIES FOR EUROPE AND EURASIA



areas. Such support will improve municipal service delivery and provide grants to government entities for the development of infrastructure. To complement these efforts, the United States will also strengthen the capacity of decision makers, support cooperation among nations over shared water sources, help revise water policy and legislation, and improve the financial stability of water companies.

Kosovo: The U.S. Government supports efforts to increase access to safe drinking water and sanitation facilities in municipalities with the most severe water contamination issues. The United States will work in partnership with local government authorities, regional water companies, and the coordinating body for regional water companies, and will initially target assistance to two western and two central municipalities. The United States will also mobilize financing from communities to increase the financial sustainability of foreign assistance.

Latin America and the Caribbean

The Regional Challenge

Although much of Latin America and the Caribbean boasts abundant water resources, population growth, deforestation, urban expansion, and pollution threaten access to safe water and sanitation. While regional access to improved water and sanitation is relatively high (at 92 percent and 79 percent, respectively), access rates for certain countries in the region are drastically lower (e.g., only 58 percent of Haitians have access to improved water, and only 19 percent have access to sanitation). In urban environments, insufficient wastewater treatment, poorly maintained infrastructure, and inadequate regulatory enforcement allow contamination from municipal sewage and industrial chemicals, threatening the health of millions. The region continues to experience deteriorating water quality from high rates of deforestation and soil erosion. Increasing glacial melt has threatened water resources in Andean South America. The region's wa-

ter and sanitation challenges are aggravated by poverty, social inequality, and corruption. Thus, U.S. water and sanitation activities must occur alongside other regional efforts, including advancing economic development; providing services for marginalized populations, as well as humanitarian relief to refugees and displaced persons; promoting democratic practices; and improving the quality of basic education and healthcare.

The Regional Approach

U.S. efforts in Latin America and the Caribbean focus on increasing access to water and sanitation, improving hygiene, and ensuring the quality of drinking water. Thus water and sanitation activities are frequently integrated into health programs. The United States works to strengthen integrated water management that promotes an intersectoral approach to decision making—one that balances human economic and social needs with ecological values and sustainability. Examples of regional efforts in these focus areas include:

- **Small-Scale Infrastructure (USAID):** Supports repairing aging water systems and building latrines in the two poorest departments in Guatemala; constructing drinking water systems and ventilated improved pit (VIP) and/or pour-flush latrines in rural areas of Bolivia; promoting safe water use and improved hygiene at the municipal level through integrated health care models in Nicaragua; and procuring water purification kits for distribution with other health commodities in Peru.
- **Disaster Mitigation (USAID):** Pre-positions water purification products to mitigate water-related epidemics following disasters, such as floods and hurricanes, in partnership with Procter & Gamble.
- **Capacity Building for Water Managers (USAID):** Creates and/or increases the capacity of community water management boards through training in operations and management, tariffs, water quality, billing, and collection.

FIGURE 6. PRIORITIES FOR LATIN AMERICA AND THE CARIBBEAN



- **Pollution Prevention Projects (USAID):** Two regional projects aim to improve the quality of large sources of potable water. The Lake Titicaca Pollution Management project aims to reduce threats to biodiversity in the lake's ecosystem and improve public health. USAID is also developing revenue-generating schemes with the private sector to conserve protected areas in two transboundary watersheds—the Gulf of Honduras and the Costa Rica–Panama border—that are also rich in biodiversity.
- **Initiative for Conservation in the Andean Amazon (USAID):** Provides a river and watershed basin management program for the Andean Amazon, a critical riparian habitat for many species and a source of potable water for human populations. Effective stewardship of this watershed will promote biodiversity and safeguard water resources.
- **National Plans of Action (National Oceanic and Atmospheric Administration [NOAA]):** Provides technical assistance and advice to governments in the Wider Caribbean in the development of their national programs of action to prevent, reduce,

control, and/or eliminate marine degradation from land-based activities. NOAA also provides meteorological models, water resource forecasting technology and models, and capacity building for Mexico and selected Central American countries.

Country-Level Summaries

At present, the only U.S. priority country in Latin America and the Caribbean is Haiti (Figure 6, previous page). An abridged plan for Haiti is provided below, and a detailed plan is provided in Annex A.

Haiti*: The U.S. Government supports the Government of Haiti's prioritization of water and sanitation as core health functions, as well as its efforts to increase urban access to water and sanitation. Activities are under way to increase access to potable water, rehabilitate existing water and sanitation infrastructure, and distribute point-of-use water treatment in communities and villages across Haiti, as well as promote watershed management committees that can assume responsibility for increasing groundwater recharge and addressing water pollution.

Middle East and North Africa

The Regional Challenge

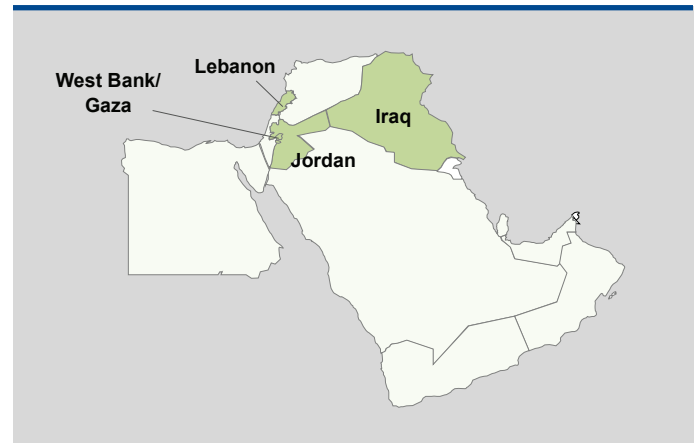
The Middle East and North Africa is already the most water-stressed region in the world, and, with projected population growth, per capita availability of water is expected to decrease substantially over the coming decade. Although water supply and sanitation infrastructure have grown considerably, the region still faces poor water quality and limited and erratic access to water supply and sanitation. Management of water resources is made difficult by limited rainfall that also varies among countries, and the effects of climate change may further intensify this challenge. Sixty percent of the region's water, including aquifers and major rivers, cross international borders. Poor water resources management, exemplified by weak water management entities and a lack of transparency and accountability, may exacerbate regional water challenges. Because water and sanitation problems are aggravated by poverty, conflict, and corruption, activities addressing water and sanitation issues most successfully occur in parallel to development efforts aimed at restoring confidence in legitimate governments, supporting judicial and legal reform, strengthening educational institutions, and promoting peace in the region.

The Regional Approach

U.S. efforts in the Middle East at the regional level focus on promoting accountable water governance and joint management activities, providing high-quality data for water managers and decision makers, reforming regulations and policies, and increasing access to water and sanitation. Such efforts are a central element of the U.S. Government's engagement in the **multilateral track of the Middle East Peace Process**. By addressing pressing water issues of mutual concern, building capacity, and forging strong professional ties and mutual trust, these programs are creating a broader and more solid foundation for our goal of reaching a secure and long-lasting peace in the region. The United States often leverages its support for projects by gaining other international donors' support. Examples of regional efforts in the focus areas include:

- **Regional Water Governance Benchmarking (USAID):** Assists countries in the Arab region in assessing their policy, legal, and organizational setups for water resources management and by enabling them to compare, guide, and monitor national prog-

FIGURE 7. PRIORITIES FOR THE MIDDLE EAST AND NORTH AFRICA



ress on water governance. The resulting system will assist in preparing and monitoring national water master plans and strategies, and promote a water management vision based on participation, equity, and sustainability. The project will initially operate in Egypt, Jordan, Morocco, Oman, and Turkey.

- **Arab Water Academy (AWA) (USAID):** Provides training programs to empower Arab water leaders and decision makers to address the water scarcity challenge. Launched in July 2008, the AWA was created with the aim of becoming a regional “center of excellence” for executive education in water and an agent of change to transform the culture and governance of water in the region.
- **Regional Water Cycle Monitoring (NASA and USAID):** Currently developing a water cycle monitoring model for the Arab and North African regions, using remote sensing information. The outcomes of this system will improve water managers' ability to monitor near-real time changes in water availability, provide a tool for predicting regional hydrological impacts of climate change scenarios, and provide a platform for data sharing among nations. NASA will collaborate with the Arab Water Academy and train professionals from the region.
- **International Water Association (IWA) (USAID):** Works with Rotary International Partnership to strengthen water utilities and their regional associations, such as the Arab Countries Water Utility Association. The IWA creates networks through which local water utilities can learn from each other,

in order to extend access to water and sanitation to the poorest segments of the population, particularly the urban poor.

- **Transboundary Management of the Jordan River (USAID):** Promotes cooperative management of the Lower Jordan River by assessing its water quality and flows, raising awareness about this historic river, and mobilizing Israeli, Jordanian, and Palestinian champions to achieve concrete steps towards restoration.
- **Regional Water Data Banks Project (also called EXACT) (DOS):** Brings together Israelis, Palestinians, and Jordanians, as well as international donors, to discuss and address, often through training, regional water issues under U.S. chairmanship. This training, funded under the Middle East Multilateral (MEM) program, helps to strengthen regional water expertise, enhance relations between water experts, and create a greater awareness of the limited nature of regional water supplies.
- **Middle East Desalination Research Center (MEDRC) in Muscat (DOS):** Supports the development of cost-effective, region-specific desalination techniques by providing training courses, funding scholarships, supporting research, and facilitating information exchange. Israeli, Palestinian, and Jordanian officials are integrally involved in conjunction with international donors in this project under the MEM, where the United States serves as co-chair of the Executive Board.
- **Middle East Watershed Monitoring Project (DOS):** Fosters expert dialogue and technical exchanges on topics related to soil and water conservation to address challenges of degradation and desertification in Jordan, Israel, the West Bank, and Gaza within the MEM framework.
- **Middle East Irrigation Management Information System (DOS):** Supports research, joint training, and the creation of a network of agricultural meteorological stations to address regional irrigation efficiency as part of the MEM program.

Country-Level Summaries

U.S. priority countries in the Middle East and North Africa are highlighted in Figure 7. Abridged plans for each country are provided below, and a detailed plan for Jordan is provided in Annex A.

Iraq: Access to safe drinking water remains a challenge to many Iraqis. U.S. water and sanitation efforts in Iraq have focused primarily on providing potable water, especially to at-risk populations. Other activities have included improving sewerage, rehabilitating water distribution infrastructure (e.g., pump stations and generators), repairing and maintaining dams, improving irrigation infrastructure and practices, building technical capacity for integrated water resources management, mapping irrigated lands, and supporting water conservation activities.

Jordan*: The United States will work in Jordan's largest population centers as well as in small communities to increase awareness of water issues, strengthen water-related institutions and policies, and build new infrastructure. Activities will include building treatment facilities to provide sanitation services, promoting the use of treated wastewater, increasing water efficiency, promoting water conservation and harvesting, improving watershed management, and exploring alternative rural livelihood approaches to reduce the stress on groundwater resources.

Lebanon: Poor water quality, caused by agricultural, industrial, and domestic waste, is prevalent throughout Lebanon, especially in the south. The United States will concentrate on improving drinking water quality by reducing untreated effluent. The United States will complete construction of two additional small community wastewater treatment plants and provide complementary training in operations and maintenance and financial management. The United States will continue to support the South Lebanon Water Establishment and hopes to replicate this type of assistance with other water establishments. The United States will also support water conservation efforts in river basins, such as the Litani River Basin.

West Bank and Gaza: U.S. efforts will focus on repair and rehabilitation of small-scale water and sanitation facilities and increasing access to new or improved potable water supply and sanitation facilities. To address potable water needs, the United States will supply tankered water and water collection cisterns while instituting long-term solutions, such as harvesting rainwater and improving water transmission and distribution systems.

3.2 Global-Level Implementation

In addition to investments at the country and regional level, the United States supports partnerships and scientific and diplomatic initiatives that provide support, catalyze action, and/or increase political will to address water and sanitation challenges at the global level.

Global Activities and Partnerships

Global partnerships leverage U.S. support and take advantage of economies of scale to provide more effective and efficient assistance. Representative water-related global partnerships include:

- **Water and Development Alliance (USAID):** Supports activities to increase access to sustainable and improved sources of water and sanitation services, protect and sustain watersheds, and enhance the productive uses of water. The Water and Development Alliance operates in 16 countries in partnership with the Coca-Cola Company.
- **Hygiene Improvement Project (HIP) (USAID):** Aims to reduce diarrheal disease and improve child survival through sustainable improvements in three key hygiene behaviors—hand washing with soap, safe feces disposal, and household safe storage and treatment of drinking water. Programs are under way in Madagascar and Ethiopia. HIP also provides technical support for hygiene improvement programming in Nepal, Peru, Uganda, India, and several West African countries.
- **Famine Early Warning Systems Network (FEWS NET) (NASA, NOAA, and USAID):** The FEWS NET works with international, regional, national, and NGO partners providing food security assessments in 21 countries in the regions of Africa and Central America, and in Haiti and Afghanistan. NASA, along with the USGS, will work to enhance the operations of USAID's FEWS NET decision support system for international food aid programs, through the integration of Earth science remote sensing and modeling data. The enhanced system will provide a more effective use of limited available hydroclimatic observations association with food security assessment in data-sparse and developing-country settings.
- **The International Network to Promote Household Water Treatment and Safe Water Storage (CDC and USAID):** USAID has co-chaired the network's Implementation Working

Group and, through its implementing partners, has contributed research and lessons learned on scaling up promotion of household water treatment and safe storage. USAID is implementing household drinking water disinfection programs in Angola, Benin, Democratic Republic of the Congo, Haiti, India, Indonesia, Kenya, Madagascar, Malawi, Mozambique, Nepal, Rwanda, Uganda, and Zambia. The CDC has developed and tested protocols for treating and safely managing water at the household level. For example, the CDC developed the Safe Water System (SWS), consisting of a point-of-use treatment using locally produced sodium hypochlorite solution; safe water storage containers; and behavior change promotion. In 2008, the CDC, with partial support from USAID, supported SWSs in Kenya, Indonesia, Malawi, Haiti, and Ethiopia, among other countries. The Network Secretariat is housed at the World Health Organization.

Improving Science and Technology Capacity

In addition to direct investments to increase science and technology capacity in developing countries, many U.S. agencies conduct research, provide training, and share scientific information globally to advance understanding and management of water and sanitation challenges. U.S. experts actively participate in international scientific organizations and partnerships related to water, such as the International Hydrological Programme of UNESCO, the World Meteorological Organization, and the Group on Earth Observations. Examples of U.S. science and technology efforts in 2008 include:

- **Water safety plans (WSPs) (CDC, EPA, and DOS):** Provides technical assistance for developing WSPs—health-based risk analyses to identify vulnerabilities in community water supplies and prioritize investments to remedy them. U.S. agencies have worked with the World Health Organization to develop an online portal that serves as a free and accessible central repository of information about WSP worldwide activities and to promote collaboration among proponents and practitioners of WSPs. At least eight countries are in the process of developing WSPs, and two countries—Jamaica and Brazil—have incorporated them into their public health legislation. The interagency group has also supported the launch of a Water Safety Plan Network for Latin America and the Caribbean to promote and standardize the development and implementation of WSPs throughout the region.

- **Remote Sensing and Decision-Making Support (NASA, NOAA, United States Group on Earth Observations, and USAID):** Because developing countries typically have sparse data-collection systems, developing their ability to access and use remote sensing data is particularly important. Remote sensing observations, combined with modeling and analytic capabilities, enable decision makers to manage humanitarian and water issues ranging from disasters and famine early warning to trans-boundary waters and other water resources.

USAID is supporting a global system of earth observation and data visualization hubs building on developing-country institutions to provide public access to data and decision-support tools for evidence-based development. NOAA is implementing a Global Flash Flood Guidance (Forecasting-FFG) system in conjunction with USAID's Office of Foreign Disaster Assistance, the Hydrologic Research Center, and the World Meteorological Organization. Currently, NOAA-installed FFG systems are operational in Central America and the Mekong River basin, and future systems are planned for Southern Africa and the Middle East.

In partnership with the World Meteorological Association, NOAA has trained professional scientists from 25 countries in hydrologic forecasting. The United States Group on Earth Observations, which comprises representatives from 15 member agencies and three White House offices, coordinates U.S. involvement with the Global Earth Observation System of Systems. This international effort seeks to integrate earth observations, prediction, and decision-support systems and make them easily accessible.

NASA provides a database of global flood calculations for governments and organizations through SERVIR. Results are used for flood potential mapping and disaster preparation to better anticipate and manage hydrologic variability. NASA's precipitation and other satellite data are used with digital elevation models to calculate the occurrence, severity, and time evolution of floods and rainfall-induced landslides that continue to be used by humanitarian assistance organizations to analyze disasters and plan mitigation activities throughout the world. In partnership with NOAA and other international agencies, NASA designed a framework to improve water resources management and the scientific understanding of the water cycle in Latin America and the Caribbean. This effort has been expanded to Africa.

- **Water Resources Assessments and Models (Department of Energy [DOE], NASA, NOAA, United States Army Corps of Engineers [USACE], U. S. Department of Agriculture [USDA], and USGS):** Water resource assessments and models give decision makers information on crucial topics, such as availability of water, quality of water, and water-related hazards, and are necessary to effectively manage water resources. With support from USAID, the USGS conducted an assessment of water resources in Afghanistan's Kabul Basin to examine water availability, given expected population growth and climate change impacts. USACE conducted training in surface water modeling in Kenya and surface and groundwater modeling in Ethiopia. USACE also completed a series of technology transfer workshops on the use of a water management system model for Iraq's Tigris and Euphrates Rivers. Sandia National Laboratories (DOE) helped Iraq's Ministry of Water Resources develop an integrated water-agriculture model, and completed similar work in other basins throughout the world. In Mexico, NOAA is working with the Water Commission (CONAGUA) in Mexico and the Ministry of Water and Environment in Romania to implement the National Weather Service river forecasting system to predict floods and forecast rivers to manage water resources more effectively. NASA, USAID, and USDA are also supporting the Nile Basin Initiative to improve decision support systems.
- **Disaster Risk Reduction—Hydrometeorological Hazards (USAID):** Reduces vulnerability to floods, droughts, and other hydrometeorological hazards through an integrated and multisectoral approach that addresses the needs of a population while emphasizing capacity building along with locally sustainable and environmentally sensitive measures. USAID supports flood and drought early warning, preparedness, and mitigation activities, including: 1) implementation of flood forecasting in trans-boundary rivers in Asia (Mekong and Ganges-Brahmaputra-Meghna river basins); 2) drought monitoring, climate prediction, and applications in East Africa; 3) global flood hazard mapping; 4) dissemination of hydrometeorological information to end users and populations in remote areas using radio and internet systems (RANET) in Africa and Asia-Pacific; 5) community-based flood and drought management activities in Asia and Africa; and 6) global flash flood guidance system to support national meteorological and hydrological services and disaster management agencies.

Increasing Political Will

The United States engages diplomatically to increase the priority given to water and sanitation issues, promote cooperation on shared water resources, and strengthen regional and global processes related to water and sanitation. Examples from 2008 include:

- **The G-8:** The United States worked for G-8 recognition of water and sanitation issues in the Leader's Statement of the 2008 G-8 Summit in Toyako, Japan. The United States also gained G-8 agreement to explore opportunities for strengthening the G-8's engagement in Africa.
- **The African Union Summit:** The United States worked with African partners and other stakeholders to elevate water and sanitation issues at the 2008 African Union Summit in Sharm El-Sheikh, Egypt. African leaders committed to preparing national strategies and plans to achieve the internationally agreed goals on water and sanitation and to increase the domestic financial resources allocated to implementing these plans and strategies.
- **The UN Commission on Sustainable Development (CSD):** The United States worked with the UN to focus the review session on water and sanitation (held during the 16th Session of the CSD) on identifying proven approaches that can be scaled up to meet the internationally agreed goals on water and sanitation.
- **The Nile Basin Initiative:** The United States joined with other donors in calling for the establishment of a formal intergovernmental institution to cooperatively manage Nile basin resources.

3.3 New Activities/Initiatives for FY 2009

A number of new regional and global programs/initiatives are under development and are expected to be operational in FY 2009.

- **Southern Africa Regional Environment Program (USAID):** Will support water authorities at different stages of maturity to improve the overall management, and thereby service delivery, of existing and new water and sanitation infrastructure. Pending consultation with provincial, municipal, and local governments, other activities may include rainwater harvesting and provision of point-of-use treatment

and sanitation services. The program will prioritize community participation and environmental sustainability and will use existing partnerships, such as the Southern African Development Community and the Okavango River Basin Water Commission.

- **Africa Water Operators Partnership (USAID):** Will pair African utilities with each other to support learning between peers rather than relying on outside experts to transmit innovations. Regional water operator partnerships have been established in many parts of the world to promote the use of local and regional experts to solve water and sanitation utility issues. Many African utilities have begun to adopt and develop innovative reforms and to achieve impressive efficiencies in delivering sustainable services.
- **Ambassador's Water, Sanitation, and Hygiene in Schools Initiative (DOS):** Will partner up to 20 U.S. embassies worldwide with an NGO to implement a project to provide latrines, hand-washing stations, and hygiene education to a school in its region. The embassies will use project milestones as opportunities to talk about broader U.S. water and sanitation policies. The initiative aims to increase the political will of these countries at the local and national level to address the basic sanitation and hygiene needs of their people.
- **African Ministers' Council on Water (AMCOW) Technical Assistance Program (DOS):** Will build AMCOW capacity and facilitate the engagement of U.S.-based universities, NGOs, and other partners with AMCOW on water and sanitation activities. AMCOW is a regional organization that promotes cooperation, security, social and economic development, and poverty eradication through the management of water resources and provision of water supply services in Africa.
- **Sustainable Water and Sanitation Activities in Africa (SUWASA) (USAID):** Will promote innovations in WASH reform and finance in up to 15 African countries. Building on lessons learned from the ECO-Asia project, SUWASA will provide technical assistance, commodities, and small capital grants to support water utility reform and a simultaneous expansion of improved services into underserved areas. Programs will be coordinated with active donor and lender programs to create synergies.

■ **International H2O Collaboration (USAID):**

In partnership with Rotary International, will increase access to safe drinking water and sanitation and reduce water-related diseases through investments in municipal and community water supply and sanitation systems, household sanitation facilities, and other household-level technologies and products; behavior change and hygiene promotion; and the enabling environment (to improve sustainability). The initial focus countries will be Ghana, the Philippines, and the Dominican Republic.

CHAPTER FOUR

Strengthening the U.S. Strategy on Water and Sanitation

The core elements of the U.S. water strategy have been well established in previous reports to Congress and the joint USAID/DOS Framework for Action, and have been used as the basis for the country plans summarized in the previous chapter. The purpose of this chapter is to build on this strategy in three key areas. These include strengthening the capacity of the United States to provide access to water and sanitation to the poorest populations, responding more effectively to the emerging issues of climate change and variability, and improving water management to meet increasing food production needs. They reflect discussions with technical and policy experts both inside and outside the U.S. Government.

4.1 Pro-Poor Approaches for Increasing Access to Water and Sanitation

Lack of access to water and sanitation is inextricably linked to poverty. Nearly two out of three people without safe water live on less than \$2 a day.¹⁶ Conversely, poverty reduction and economic growth are difficult, if not impossible, without access to water supply and sanitation. Challenges in increasing access to water supply and sanitation for the poor are not the same in urban settings as they are in rural ones. In urban areas, rapid in-migration often outpaces governments' abilities to provide services to the poorest people. Many water and sanitation utilities have poor performance records and have failed to increase access for the urban poor due to vested interests, administrative and legal issues, low capacity, inappropriate financial policies, and physical and technical barriers. In rural areas where community management of water supply and sanitation prevails, obstacles to expanding and maintaining services to the poor include difficulties in accessing credit, mobilizing competent staff, and engaging the private sector.

U.S. Strategic Interests

Addressing the needs of the poor is critical to achieving U.S. foreign assistance goals. Safe supplies of water and sanitation and hygiene improvements can save millions of lives by reducing the prevalence of water-borne diseases. Every \$1 invested in safe water and sanitation yields an economic return of between \$3 and \$34.¹⁷ Cooperative water management helps prevent countries from entering into conflict over shared water resources and, by promoting dialogue and cooperation among former antagonists, can help prevent the re-emergence of conflict.

U.S. Pro-Poor Approaches to Increase Access to Improved Water and Sanitation

WASH interventions do not inherently benefit the poor. Applying pro-poor approaches requires conscientious effort and specific actions in policies and programs that target the poor. The international community often defines the poor as people living on less than \$1 or \$2 a day, or people with income in the bottom quintile of their cohort, although other definitions are also used. Approaches that target the needs of these populations include subsidizing the "hardware" (for example, infrastructure) and "software" (for example, the regulatory environment) required to provide WASH services to the poor (including strengthening the enabling environment which supports service delivery); increasing the demand for WASH services (people that ask for WASH services are more likely to get and use them); and increasing the political will of governments and other institutions to incorporate pro-poor approaches in their own planning and implementation. Activities to implement these approaches are highlighted below.

¹⁶ UNDP, *Human Development Report. Beyond Scarcity: Power, Poverty and the Global Water Crisis*, 2006.

¹⁷ Hutton, Greg, and Laurence Haller, *Evaluation of the Costs and Benefits of Water and Sanitation Improvements at the Global Level*, Geneva: WHO, 2004.

1. Provide hardware and software support for sustainable access to water, sanitation, and hygiene for the poor

- Build capacity to ensure sustainable operations and maintenance on systems that service the poor.
- Mobilize pro-poor financing for infrastructure improvements via any number of mechanisms, e.g., social responsibility funds, credit directed to providers of products and services, subsidies for household connections, and loans to individuals and households.
- Provide a range of affordable technologies for poor households, including safe water storage, point-of-use water household water treatment, and appropriate on-site sanitation.
- Support good water and sanitation governance through strengthened policy, institutional, and legal frameworks.
- Support innovative service delivery alternatives, such as small-scale providers, and facilitate public-private partnerships.

2. Increase demand among the poor for water, sanitation, and hygiene services

- Educate poor groups about the benefits of WASH services, including through local WASH-in-school programs and broader community outreach.
- Apply gender equity and leadership approaches.
- Support innovative behavior-change methods that target whole communities, such as social marketing for WASH services and products, sanitation marketing, and community-led total sanitation.

3. Improve political will to provide WASH services to the poor and promote pro-poor governance

- Reform utilities to embody common management principles that benefit the poor, such as accountability, transparency, and the participation of communities in decision making.
- Empower local and basin-level civil society groups to carry out decentralization efforts that can give more voice to the poor.
- Improve monitoring and set transparent targets for access to sanitation and water for the poor.
- Incorporate pro-poor considerations into national and subnational plans of action.

Gender and education issues cut across the three approaches. In most cultures, women have the primary responsibility for water, sanitation, and hygiene at the household level and play a crucial role in influencing the hygiene behaviors of young children. Yet the weak voice of women in shaping spending priorities within the household means that the constituency with the strongest expressed demand for water supply and sanitation has little control over expenditures. As for education, evidence clearly links school attendance to the availability of water supply and sanitation facilities in school compounds, especially for girls. The presence of adequate sanitation facilities ensures sustained attendance, particularly when girls reach adolescence. School-based WASH programs also serve as platforms to improve hygiene behaviors throughout communities as a whole.

4.2 Responding to Climate Change

Climate change will influence the water cycle at local to global scales, impacting human livelihoods, food security, economic growth, and peace and security. Experts predict that in many cases wet regions will become wetter (increasing the likelihood of floods, which may damage infrastructure, destroy crops, and threaten lives) and that dry regions will become drier (increasing the likelihood of droughts, food insecurity, environmental degradation, and reduced water availability for human consumption). Rising sea levels raise the risk of storm surges, flood damage, and saltwater intrusion into freshwater supplies.

Factors that underlie expected increases in seasonal water stress and long-term water shortages include less water stored as snow in the early summer months (as rainfall replaces snowfall); changes in snowmelt (both timing and amount); changes in evapotranspiration (and hence runoff); and movement of storm tracks.¹⁸ The effects of climate change may degrade water quality as well. Energy security can be impacted by reduced water availability and increased water temperature, which can also affect biodiversity. Water-related disasters are expected to become more common with increasingly severe and frequent extreme events. Changing hydrologic conditions may undermine countries' abilities to comply with long-standing treaty regimes for managing shared waters. Competition for increasingly scarce water resources has the potential to aggravate tensions within and among states.

Sound water management also has a role in mitigating climate change. The water sector is often one of the largest consumers of energy. More than 800 million people in developing countries disinfect water by boiling, using local fuels like wood and charcoal. Large-scale water infrastructure, such as dams, can also play a role in creating renewable sources of energy.

U.S. Strategic Interest

The United States is dedicated to ensuring that countries have reliable and sustainable access to enough water of sufficient quality to meet human, livelihood, ecosystem, and production needs while reducing the risks of extreme hydrological events to people, the environment, and economies. Climate change will impact every element of this goal.

Key Challenges and Approaches¹⁹

Because we cannot predict with high confidence precisely how climate change will impact the hydrologic cycle, U.S. water and sanitation activities responding to climate change will be based on the following principles:

- Identify and implement “no-regret” solutions—activities that will have significant water and sanitation impacts regardless of climate change.
- Focus on building resilience into existing or planned activities. Reducing vulnerabilities to hydrologic variability will also further long-term adaptation goals.
- Seek win-win solutions that yield both mitigation and adaptation benefits—mitigation opportunities in energy, agriculture, and forestry can also serve water adaptation efforts.²⁰

I. Building Resilience through Improved Water Resources Management:

Protecting the natural environment is often an effective and inexpensive way to build resilience. As a complementary approach to infrastructure design and retrofits, the United States will use integrated water resources management as a framework to help nations adapt to anticipated changes in the hydrologic cycle resulting from climate change. Examples include:

¹⁸ Bates, B.C., Z.W. Kundzewicz, S. Wu, and J.P. Palutikof, eds., *Climate Change and Water*, IPCC Technical Paper VI, Geneva: Intergovernmental Panel on Climate Change Secretariat, 2008.

¹⁹ Additional information on U.S. approaches to climate-water adaptation:

- USAID, *Adapting to Climate Variability and Change: A Guidance Manual for Development Planning*, Washington, D.C.: USAID, 2007. (http://www.usaid.gov/our_work/environment/climate/docs/reports/cc_vamannual.pdf).
- USEPA, *National Water Program Strategy: Response to Climate Change*, Washington, D.C.: USEPA, 2008. (<http://www.epa.gov/ow/climatechange/strategy.html>).
- Brekke, Levi D., et al., *Climate Change and Water Resources Management: A Federal Perspective*, Reston, Va.: USGS, 2009. (<http://www.drought.gov/imageserver/NIDIS/homepage/feature.pdf>).

²⁰ Examples of such solutions might include reducing deforestation to improve water quality and reduce flood risks and greenhouse gas emissions, reducing reliance on fossil fuels to purify water and develop and enhance deployment of new technologies for water purification and treatment processes, reducing energy use for treating and transporting water by focusing on water efficiency, and encouraging adoption of no-till agriculture to reduce soil erosion and conserve water.

- Efforts to reduce water losses, make better use of existing sources (such as demand management and recycling and reuse) and use untapped water resources (such as rainwater harvesting) to improve the water security of cities that depend on glacial meltwater. Energy savings from such efforts may provide financial leveraging through carbon markets.
- Working to improve green infrastructure, such as wetland protection, improving vegetative cover and soil stabilization, promoting water-efficient crop varieties and sustainable crop rotation, improved plowing and grazing practices, and increasing natural vegetation near rivers can improve quality, buffer storm surge and floods, reduce erosion and moderate runoff.
- Assisting partner countries to incorporate climate adaptation into national water strategies.
- Improving water availability models to assess future climate change impacts.

2. Building Resilience into Human-Built Infrastructures: Many water supply and sanitation infrastructures are vulnerable to climate change. Climate resiliency needs to be incorporated into the engineering design of new infrastructure, and existing structures may need retrofitting. This is particularly true for urban infrastructure, which has a long planning horizon and a lifetime of decades or more. The United States will consider climate change impacts in planning U.S.-supported long-term investments in infrastructure. Examples include:

- Retrofitting coastal cities' water and wastewater infrastructure so that they are more resilient to the risk of rising sea levels and increased extreme rainfall events.
- Accounting for vulnerabilities due to potential changes in hydrology in the design of reservoirs and of storm and wastewater systems.
- Accounting for vulnerabilities due to potential changes in water availability and temperature in the design of energy infrastructure, such as thermoelectric plants and hydroelectric dams.

3. Disaster risk reduction: Water-related hazards are expected to become more common with increasingly severe and frequent extreme events, including storms, floods, landslides, glacial lake outbursts, droughts, extreme temperatures, and wildfires. Extreme events will reduce people's resilience to potential disasters and exacerbate such events' socioeconomic impacts. The

United States will continue helping countries better prepare for hydrometeorological disasters. Such activities might include:

- Disseminating information about climate hazards and their likely future intensity or frequency, and helping countries to incorporate those likely changes into national disaster risk reduction strategies.
- Strengthening and maintaining infrastructure—both built and green—and designing environmental interventions to reduce vulnerability to climate-induced disasters. Examples of interventions are land-use planning, floodproofing settlements and public buildings, watershed management practices, and protecting mangroves and wetlands.
- Helping countries conduct climate-informed vulnerability and impact assessments, including identifying the most vulnerable groups and infrastructure that is at increased risk.
- Strengthening community-based preparedness and hydrometeorological early-warning systems to reduce current vulnerability to climate variability while increasing resilience to climate change.

4. Addressing water quality and health: More frequent and heavy precipitation events are likely to flush more pollutants into water systems, for reasons ranging from increased agricultural runoff to overloaded storm and wastewater systems. Floods can cause widespread contamination, and increased water temperatures foster the growth and survival of pathogens in the environment. These changes are expected to negatively impact water quality and increase the incidence of waterborne diseases. The United States will continue helping developing countries improve their water quality and capabilities to address waterborne diseases in some regions. Examples include:

- Supporting research and assessment activities focused on the effects of climate change on weather-related morbidity and on vector- and waterborne diseases.
- Ensuring that the design of sanitation services accounts for increasingly severe precipitation events and flood risks; designing non-water-based or water-efficient sanitation systems; and training local communities on how to build, maintain, and repair those systems.
- Improving capabilities for monitoring water quality.
- Improving the distribution of point-of-use water treatment methods in response to disasters.

5. Fostering cooperation on shared water resources:

Transboundary water agreements may need to be revised to account for the impacts of climate change. The United States will continue helping countries cooperatively manage transboundary water resources. Examples activities include:

- Supporting studies to assess how climate change could adversely impact the availability of water from a shared river or aquifer.
- Strengthening the capacity of countries to monitor climate-induced changes in the quantity and quality of shared water.
- Sharing best practices in incorporating climate change in transboundary water management and agreements.

6. Sharing science and technology: The United States will continue to share its science and technology expertise to help developing countries anticipate and respond to the impacts of climate change on water. Examples include:

- Helping countries improve their capacity for collecting and organizing climate-relevant data, modeling results, and assessing impacts.
- Developing improved methods to downscale global climate change models.
- Developing new water planning approaches that incorporate the non-stationary nature of the hydrologic cycle and climate system.
- Developing best practices for risk management-based decision making under conditions of deep uncertainty.
- Facilitating the transfer of intellectual property to develop crop varieties better able to adapt to climate change.

4.3 Using Water to Increase Food Security

Scarcities and quality problems in freshwater resources threaten to reduce the global food supply by more than 10 percent in the next 25 years. As the global population grows from roughly 6.7 billion to about 8.4 billion in 2035, the world's ability to feed its people will be severely challenged by competition over increasingly limited resources, poor management of natural fisheries, changing patterns of food consumption, altered hydraulic flow regimes, compromised soils and water quality, and alteration of once productive aquatic ecosystems, such as wetlands and coastal fisheries.

Two and a half billion people in developing countries rely on fish as a significant source of much-needed protein, and fish are the primary source of protein for some one billion people.²¹ Soil degradation has already reduced global agricultural productivity by 13 percent in the past 50 years.²² Each year, 12 million hectares—enough land to grow 20 million tons of grain—are lost to desertification. Nearly 95 percent of urban sewage is dumped untreated into rivers and lakes, many of which supply water for irrigation and support critical food-producing ecosystems. Aquifer depletion, salinization of soils, and the reallocation of agricultural water to other sectors and users will combine to limit irrigated crop production and lead to food insecurity, particularly for the poorest. In addition, changes in precipitation and heat levels are projected to diminish agricultural productivity and reduce food security.

Studies suggest that at least 20 percent more irrigation water will be needed by 2025 to meet projected food demand in developing countries.²³ In addition to, or as an alternative to, increasing irrigation efficiency and use, achieving food security will require new forms of water management in rainfed agriculture, watershed managements, inland fisheries, aquaculture, livestock production, and rangeland management. In particular, improvements in the water productivity of rainfed agriculture are vital to achieving food security. Eighty-two percent of cropland worldwide is rainfed; in Sub-Saharan Africa, 96 percent is rainfed. Highly variable rainfall and recurrent droughts limit the productivity of those lands, while climate change and increasing hydrological

²¹ Food and Agriculture Organization (FAO), *The State of the World Fisheries and Aquaculture*, Rome: FAO, 2000.

²² Wood, S., K. Sebastian, and S. Scherr, *Pilot Analysis of Global Ecosystems: Agroecosystems*, Washington, D.C.: International Food Policy Research Institute and World Resources Institute, 2000.

²³ International Food Policy Research Institute (IFPRI) and International Water Management Institute (IWMI), *Global Water Outlook to 2025: Averting an Impending Crisis*, 2002.

variability may exacerbate these problems. Improved soil and water conservation practices increase rainwater infiltration and retention while increasing resilience to drought.

Water quantity and quality are integral to the health and productivity of ocean and freshwater systems. Fish and seafood are the most widely traded foods and the largest extractive use of wildlife, and thus are critical for global food security. Increasing demands for water storage and water use are altering the natural environmental flows in rivers, wetlands, and coastal estuaries. Agricultural runoff and dumping of untreated sewage contribute to eutrophication of aquatic ecosystems. The combination of decreased water flow and declining water quality combine to create aquatic dead zones and red tides, with disastrous impact on fisheries. The drop in the productivity of natural systems threatens the food security of billions of people, many of them poor, marginalized, and without secure land or sea tenure. Finally, floods, droughts, higher temperatures, and shifting climactic patterns affect harvests and imperil long-term food supplies.

While water can be used to increase food security, the converse is also true: food can be used to increase water security. “Virtual water” is the water embedded in food or other products needed for its production. Countries that have little water can import food that requires a lot of water to produce while exporting products that require little water to produce. Such trade in virtual water furthers water security and can promote peace and security by reducing competition for increasingly scarce water resources.

U.S. Strategic Interest

The United States recognizes the challenges posed by poverty, hunger, and disease to individual development, economic growth, and social and political stability and is committed to remaining a leader in the fight against these closely intertwined problems. Assisting farmers and fishers in developing countries, many of whom are women, to increase their agricultural and fisheries productivity must be a central component of any effective food security strategy. In light of population growth and water resources competition, increases in agricultural and fisheries production must be achieved through techniques, technologies, and policies that fully harness and wisely manage the natural resource base upon which productivity depends.

U.S. Policies to Address the Water–Food Security Challenge

The United States aims to improve water quality, infrastructure, storage, and conservation; to increase food productivity; and to enhance weather forecasting. The United States will invest in activities that integrate management of soil, pasture, forests, fish, and native vegetation on a watershed level to improve water harvesting, conservation, and groundwater recharge. The United States also seeks to improve soil quality while reducing erosion, salinization, and other forms of land degradation. The United States recognizes that trading agricultural products that require different amounts of water (trading “virtual water”) can be an important tool to increase food and water security and to promote peace and security.

Increasing food productivity in the face of increasing water scarcity and flooding is a key challenge in achieving food security. The United States will seek to improve the efficiency of water use in agriculture in order to yield “more crop per drop.” Water-use efficiency depends on several factors, including climate, evaporation rates, soil organic matter and fertility, choice of crops, and the genetic potential of those crops. The United States aims to improve water management and help developing countries produce more food with less water.

Increasing the food productivity of fisheries will require improved resource management and governance. Similar to the major advances made with secure land tenure, fisheries governance requires a shift to secure tenure and access to the world’s fisheries. Under improved management regimes, the productivity of fish habitats and fisheries can be greatly enhanced.

Accurate and readily available weather forecasts will help farmers make informed decisions about food production, allowing them to plan more effectively and minimize agricultural losses. Enhancing short- and long-term forecasting and developing agricultural practices and technologies that respond to floods, droughts, and climate change will ensure improvements in food security, especially in areas vulnerable to hydrological variability.

Ultimately, achieving food security is a prerequisite for continuing stable economic growth rates and successfully accomplishing the UN Millennium Development

hunger and poverty reduction goals. The United States is committed to ensuring that water shortages do not turn into food shortages for the world's poor. Steps toward accomplishing these goals are as follows:

1. Improve water quality, infrastructure, storage, and conservation

- Prevent pollution of water supplies by agricultural and industrial wastes and chemicals, and reduce introduction of excess sediments and nutrients into waterways and coastal habitats.
- Improve the allocation and management of freshwater in natural systems to maintain ecosystem health and natural productivity.
- Promote water conservation through improved land management practices, and reduce irrigation demands. Reduce the amount of water lost through canal leakage, spillage, seepage, and evaporation.
- Develop the full potential of rainfed agriculture, especially in dry subhumid, temperate, tropical arid, and semiarid regions, by investing in water harvesting technologies, crop breeding targeted to rainfed environments, agricultural extension services, and access to markets, credit, and input supplies in rainfed areas.
- Explore new technologies for the treatment and reuse of water for agriculture.

2. Increase food productivity

- Enhance efficiency in irrigation water use by investing in technologies like drip irrigation, in promoting management changes like the adoption of demand-based irrigation scheduling systems, and in supporting institutional improvements like the creation of effective water user associations.
- Promote the diversification of farming into less water-intensive crops in severely water-scarce basins.
- Promote rational trade in agricultural products so that water-scarce countries can import water-intensive crops and export crops that require little water to countries with abundant water resources.

- Sustain and/or improve fisheries by protecting critical fish habitats and improving water quality.
- Invest in fisheries and aquaculture methods of enhancing food security via sustainable production of fish and shellfish, such as through secure access and tenure, fishpond maintenance, fish yield prediction, and nutrient control.
- Continue to support the Collaborative Research Support Programs (CRSPs) and the Consultative Group on International Agricultural Research (CGIAR). The CRSPs focus the capabilities of U.S. universities on addressing constraints to agricultural development through research, training, and capacity building. The CRSPs and the research centers supported by the CGIAR focus on a wide range of crop, livestock, and fish production and related natural resource management issues.

3. Enhance forecasting

- Improve farmers' knowledge of how to access and use climate outlooks to design crop management strategies.
- Support the development of decision-support systems that include monitoring and forecasting, combined with observations of ongoing socioeconomic drivers. Such systems can indicate to decision makers potential responses—from timing of new infrastructure to governance reform and capacity building in the water management sector.
- Promote scenarios and future projections that incorporate impacts on natural production systems (such as fisheries and native vegetation) and the poor that depend on them.
- Invest in precision breeding to develop affordable flood-resistant crops, such as a variety of rice called Swarna-Sub1 that can withstand two weeks of flooding.
- Develop technologies to combat the impact of drought, extreme temperature, and floods on agriculture.



ANNEX A

Country-Specific Water and Sanitation Plans

The majority of U.S. investments in water and sanitation are programmed at the country level. Each country is different—needs are different, the enabling environment is different, and the opportunities for the United States to make a significant contribution with limited resources are certainly different. While the overall approach is guided by the strategy outlined in the previous reports to Congress and the Joint USAID/DOS Framework for Action, it is at the country level that specific water and sanitation action plans responding to that country's needs are developed. Plans for a representative few countries are provided below. These plans provide background on country conditions, U.S. goals in that country, the strategy for investing U.S. resources, and country-specific indicators that can be used to track progress. Our intention is to expand the number of priority countries covered in future reports.

Armenia

Water and Sanitation Goals

Although nearly all Armenians have access to safe drinking water, and most have access to basic sanitation, a deteriorating water network is leading to pollution of and unreliable access to potable water. Around 80 percent of water is lost through network leakages and illegal connections, potable water is available for only one to two hours per day in many rural areas, and almost all sewage is discharged into rivers untreated. U.S. goals are to:

- **Improve access to water supply and sanitation, and promote better hygiene**
- **Improve water resources management**
- **Develop long-term capital financing mechanisms in Armenia's water and sanitation sector**

Approach

While the World Bank, Asian Development Bank, KfW, and the European Bank for Reconstruction and Development support rehabilitation investments in water utilities and management and lease contracts, USAID is the only donor supporting legal and regulatory reforms. USAID will help the Government of Armenia complete the revision of water legislation, conduct a baseline study of investments needed in the Armenia water and sanitation sector, and develop long-term capital financing mechanisms in Armenia's water and sanitation sector. USAID will also continue to provide limited resources to rehabilitate water supply networks. For example, in the town of Artashat and 27 surrounding villages, where potable water is supplied less than two hours a day and water losses are estimated at 80 percent due to severe corrosion, USAID will renovate water supply networks serving more than 100,000 Armenians. By doing so, USAID will leverage resources by taking advantage of the Government of Armenia's investment in and commitment to improved management of the Armenia Water Company.

With the Coca-Cola Corporation, UNDP, and the local municipality of Dilijan, USAID will implement a Global Development Alliance to install a sewerage treatment plant and associated sewerage

network in the town to reduce pollution to the Aghstev River and protect the ecosystem of that area.

In FY 2009, USAID will rehabilitate water networks in the villages outside of the water companies' service area in public-private partnerships, leveraging resources from Armenia's diaspora, other donor organizations, and local communities.

Armenia's MCC Compact, signed in FY 2006, includes a \$145 million Irrigated Agriculture Project (IAP). The IAP is designed to alleviate rural poverty by increasing agricultural productivity through improved water supply, higher yields, higher-value crops, and a more competitive agricultural sector. The IAP includes two components. The first involves projects to rehabilitate infrastructure, including pumping stations, main canals, tertiary canals, drainage systems, and gravity schemes (total \$113 million). The second component involves institutional strengthening activities that will boost farm productivity and profitability through technical assistance to strengthen water user associations, access to credit, and water management training. The infrastructure component was re-scoped in FY 2008 due to cost increases.

Measuring Results

The following indicators will be used to track progress of U.S. activities in Armenia:

- Number of people with improved access to safe water
- Number of people with improved sewage treatment
- Long-term capital financing options developed in Armenia's water and sanitation sector
- Increase in area covered by high-value-added crops
- Additional land irrigated under project
- Kilometers of tertiary canals rehabilitated
- Value (\$) of signed contracts for works for irrigation systems

Results in 2008

Approximately 1,550 Armenians received access to 24-hour water supply, and 45,000 Armenians accessed water for two additional hours each day due to rehabilitation of infrastructure in Artashat town and 14 nearby villages. USAID reestablished groundwater monitoring and improved the regulatory environment for water supply companies. Four small reconstruction projects were completed, leading to renovation of hygiene and sewage facilities in three boarding schools and one ambulatory clinic.

The Government of Armenia created Millennium Challenge Account (MCA)–Armenia to implement the five-year Compact, which entered into force in September 2006. In August 2008, a pilot project to rehabilitate 6.5 km of tertiary canals was completed. Civil works on a small segment of a main canal is ongoing. All design contracts are under way, final design of most infrastructure components are complete, and requests for proposals for most works contracts are estimated to be released in 2009. As of December 31, 2008, \$6.0 million had been contracted for works.

Ethiopia

Water and Sanitation Goals

Ethiopia is a water-stressed country. Its 77 million people have one of world's lowest rates of access to safe water supply, sanitation, and hygiene, despite their abundant groundwater and surface water resources; daily per capita safe water availability is only 2.5 liters. Almost 84 percent of Ethiopians live in rural areas, where only 42 percent have access to safe drinking water (13 percent have access to piped water) and only 12 percent have access to improved sanitation facilities. Diarrhea accounts for approximately 20 percent of all under-five deaths, and 88 percent of the total diarrhea cases are attributed to inadequate and unsafe water and poor sanitation. The U.S. goal is thus **to improve the health of Ethiopians by increasing access to safe water supply, improving sanitation, and promoting better hygiene.**

Approach

In 2009, USAID will support efforts to reach rural communities through existing structures such as village associations and schools. The Millennium Water Alliance program will strengthen community and local government capacity to manage and administer existing and new water and sanitation facilities, and will strengthen environmental hygiene education. The Community School Partnership program will provide potable water, sanitation, and hygiene services and promote health education in primary schools. The Pastoral Livelihood Initiative program will focus on rehabilitation of the existing water schemes in pastoral areas. The Productive Safety Net Program (PSNP) PLUS will develop potable water supply for PSNP beneficiaries by making use of the increased supply resulting from P.L. 480 Title II-funded PSNP public works in water harvesting and from watershed and natural resources management activities that recharge groundwater and restore the water table.

The water components of many of the above programs have recently started or will start soon, while the ongoing Millennium Water Alliance program will emphasize program consolidation. In 2009, USAID intends to provide an improved drinking water supply and improved sanitation facilities to 37,000 Ethiopians. USAID is currently designing a follow-on water supply and sanitation program to build on the previous efforts.

USAID coordinates with the Government of Ethiopia and other donors to implement the country's Water Sector Development Program (WSDP), which aims to improve the proportion of the population with access to safe water to 71 percent by 2015 and achieve universal access to sanitation by 2012. WSDP is a framework to coordinate stakeholders' involvement, and supports Ethiopia's efforts to achieve the Millennium Development Goals. USAID efforts complement those of the World Bank (financing major rural water and sanitation projects in all regions of Ethiopia), the African Development Bank, UNICEF, and European Union member countries, all of which are providing assistance for water and sanitation.

Measuring Results

The following indicators will be used to track progress of U.S. activities in Ethiopia:

- Number of people with access to improved drinking water supply
- Number of people with access to improved sanitation facilities

Results in 2008

USAID, through the Millennium Water Alliance, established 91 protected water schemes in 26 districts and supported the rehabilitation of 12 existing water schemes, as well as the construction of over 5,000 household pit latrines and 29 latrines for schools. Through these efforts, approximately 69,000 Ethiopians have access to improved drinking water supply and 36,000 have access to better sanitation facilities. To ensure community ownership, water committees were established at each water scheme, and over 850 committee members were trained in operation, maintenance, and financial management.

In addition, the Pastoralist Livelihood Initiative program rehabilitated 29 water points in the Afar, Oromiya, and Somali regions. The water points are used for domestic human consumption as well as for livestock. To keep the water points clean and safer for human use, water troughs serve animals only.

Additional Support

In Ethiopia, USAID's Office of Foreign Disaster Assistance (USAID/OFDA) supports water, sanitation, and hygiene activities to address the immediate needs of local populations affected by drought and reduce vulnerability to future insecurities. In FY 2008 and to date in FY 2009, USAID/OFDA has provided more than \$7.7 million to support WASH activities in the Gambella, Amhara, Somali, Oromiya, and Southern Nations, Nationalities, and Peoples (SNNP) regions. Activities supported by USAID/OFDA include provision of safe drinking water, latrine construction and maintenance, and hygiene education designed to reduce the spread of waterborne diseases. In addition, USAID/OFDA funding supports emergency water tankering in the Somali region, as well as a countrywide

rapid-response program focused on small-scale emergencies, including floods, acute waterborne diarrhea outbreaks, and population displacement.

With funding from the President's Emergency Plan for Aids Relief (PEPFAR), USAID/Ethiopia will support 75,000 HIV-positive people with point-of-use safe water products and water vessels. These safe water systems are part of a "Preventive Care Package" service provided to HIV-positive people to reduce morbidity and mortality.

The Combined Joint Task Force—Horn of Africa supports the Geological Survey of Ethiopia in developing a master water resources database and the Ogaden Basin Groundwater Resource Assessment.

Georgia

Water and Sanitation Goals

Georgia's water supply and sanitation networks are highly deteriorated, leading to estimated water losses as high as 50 percent and frequent waterborne infections. Water delivery is sporadic, and most wastewater is discharged directly into open water bodies. Maintenance and repair are desperately needed, yet inadequate legal and institutional frameworks impede progress. In FY 2008, U.S. assistance supported water programs with these goals:

- Improve access to water supply and sanitation, and promote better hygiene
- Improve water resource management

Approach

Georgia's MCC Compact, signed in FY 2005, dedicates \$69.4 million to improving municipal service delivery and provides grants to eligible government entities (local self-government, municipal enterprises, and central government) to develop infrastructure. The Regional Infrastructure Development (RID) Project focuses on rehabilitating regional and municipal physical infrastructure for water supply, sanitation, irrigation, and solid waste in regions outside of the capital, Tbilisi.

Within this framework, the program is moving forward on five municipal water supply and sanitation systems in the cities of Bakuriani, Borjomi,

Kobuleti, Kutaisi, and Poti. The goal is to provide the population of the regions with a 24-hour safe drinking water supply and to improve conditions for the development of tourism and small and medium-sized businesses. This is expected to improve productivity, increase small and medium business opportunities, and reduce household costs for water resources, generating household savings that can be put to other uses. In addition, the engineering design for the rehabilitation of an irrigation project will be funded.

USAID is supporting riparian country efforts to improve watershed management in the region. One USAID effort has supported regional workshops enabling water scientists from Georgia, Armenia, and Azerbaijan to discuss water quality and water conservation issues, and develop joint water monitoring, sampling, and analytical protocols to share data. A second program supported Georgia's efforts to reform its troubled water distribution sector, improve financial cost recovery, and identify sources of private sector participation in the future management of Georgian water distribution.

Measuring Results

The following are some of the key indicators being used to track the progress of each project.

- Savings in household expenditures for all RID (municipal water) subprojects, due to more efficient and consistent water service
- Volume of individual water consumption (liters per capita per day)
- Population served by all RID subprojects
- Number of municipal water subprojects completed
- Value (\$) of signed goods and works contracts for municipal water subprojects
- Numbers of trilateral water meetings and events held in the South Caucasus
- Number of trilateral water sampling and analysis events held in the South Caucasus
- Number of cooperative agreements signed between the nations of Georgia, Azerbaijan, and Armenia

Results in 2008

The Government of Georgia created an institution to implement the five-year Compact—MCA-Georgia—and the Compact entered into force in FY 2006. MCA-Georgia is working closely with the Municipal Development Fund (another government agency) to restore the water supply systems in Bakuriani, Borjomi, Kobuleti, Kutaisi, and Poti. Of these, one project is nearing completion, construction contracts have recently been awarded for two cities, and the procurement of works in the other two cities will soon be launched, following completion of the designs.

To implement larger-scale projects than would otherwise be possible under the RID facility, MCA-Georgia is cooperating with the European Bank of Reconstruction and Development, the Swedish International Development Agency, the European Community Delegation to Georgia, and other donors, in jointly financing the RID projects.

A memorandum of cooperation on water monitoring was signed by the nations of Georgia, Azerbaijan, and Armenia. It led to the first-ever joint water sampling and analytical event involving the hydrometeorological authorities of all three countries.

USAID also achieved progress in the development of a Water Action Plan for the Georgia Water Commission. The second of three reports, presenting financing, management, organizational, and technical constraints and options for the restructuring of 58 municipal water utilities, was prepared and presented to the Commission. The report generated consensus on the path forward, providing clear direction and expectations for the preparation and contents of the third and final report and Water Action Plan.

Haiti

Water and Sanitation Goals

Haiti ranks low on all international rankings of percentage of population with access to improved water supplies, access to sanitation facilities, and other water and sanitation indices. Only 54 percent of Haitians have access to improved drinking water, and 19 percent have access to better sanitation. In FY 2008, U.S. assistance supported water programs with these goals:

- **Improve access to water supply and sanitation, and promote better hygiene**
- **Improve water resources management**

Approach

USAID assists the Government of Haiti by supporting activities that introduce water and sanitation as a core health function and integrate water as a key component in the Haitian government's National Urban Health Mission. By doing so, USAID seeks to close the gap between the responsibilities of the Government of Haiti and the actual delivery of water in Haitian communities.

USAID assists in the provision of water and sanitation services to the urban and rural poor by ensuring accessible, reliable, and economically sustainable safe water and sanitation services in selected communities and villages in Haiti. Activities are aimed at improving health conditions, building community support mechanisms for service delivery, mitigating conflicts through constructing or rehabilitating potable water and sanitation systems, and protecting drinking water sources.

Pollution of water resources, and encroachment on protected areas and the concomitant loss of forest cover for watersheds and aquifers, is a growing threat to the water supply in Haiti. To address these challenges, USAID's strategy emphasizes increased protection of fragile upland areas through soil erosion and flood control measures, clearing of drainage canals that pollute shallow aquifers, and development of local watershed management groups.

USAID's efforts will complement those of the French Development Agency, the World Bank, and the Inter-American Development Bank, which support water supply and sanitation activities in Haiti.

Measuring Results

The following indicators will be used to track progress of U.S. activities in Haiti:

- Number of people with improved access to clean drinking water and sanitation facilities
- Number of hectares under improved natural resource management

Results in 2008

USAID assistance supported programs that improved access to clean drinking water for over 450,000 Haitians and sanitation facilities for over 163,000 Haitians. USAID piloted the provision of water treatment tablets at point of use in five communities; as a result, more than 49 million liters of treated water were provided and over 14,000 cases of severe diarrhea were averted. In addition, watershed development activities led to watershed management committees' assuming responsibility for planning and implementing sustainable economic opportunities in two critical watersheds.

India

Water and Sanitation Goals

India's growing population of more than one billion puts enormous strain on the ability of the government to provide water, sanitation, and health services. Of the 280 million Indians living in urban areas, only 65 percent have access to tap water, and only 28 percent of households are connected to a sewage system. Without timely interventions, these statistics will worsen in the next 15 years, as the proportion of India's 828 million poor who live in urban areas is expected to grow from one-third today to about two-thirds by 2025. The urban poor have less access to water, sanitation, and health services, resulting in a lack of proper hygiene and poor health. Over 400,000 newborns in urban areas die every year, with 80 percent of these deaths attributable to treatable conditions compounded by poor water and sanitation. India is one of the last four countries in the world where polio exists, due to abysmal sanitation conditions in overcrowded slums.

Moreover, agricultural practices use water inefficiently and introduce unsafe chemicals into the groundwater supply. The agriculture sector uses 85 to 90 percent of the country's available freshwater. However, irrigation efficiency is no better than 50 percent, with some estimates as low as 20 percent. Agricultural runoff and leaching are the third largest source of groundwater pollution, behind industrial effluents and untreated sewage.

U.S. goals are to:

- **Improve access to water supply and sanitation and promote better hygiene**
- **Improve water resources management**
- **Increase water productivity**

Approach

USAID's Financial Institutions Reform and Expansion—Debt Market (FIRE-D) project works with the Government of India's Ministry of Urban Development and selected states and cities to improve delivery of urban services, with a specific focus on water and sanitation, including ensuring access for the urban poor. FIRE-D supports these partners' efforts to provide water and sanitation by identifying and structuring bankable projects and accessing market-based financing. The project helps cities better maintain and operate their water and sanitation assets by strengthening various aspects of urban governance.

In partnership with Orissa state government, FIRE-D supports the state water utility in corporatizing and restructuring operations, instituting operating and financing reforms, and improving performance on moving toward full cost recovery in order to allow expansion of services to all urban residents, including the poor. The program helps the Bhubaneswar city corporation formulate a comprehensive citywide slum strategy to improve the slums. Efforts include assistance in identifying financing and preparation of phased implementation plans, with a focus on water and sanitation linked to improved health and hygiene. In Madhya Pradesh state, the program assists in the establishment of the state Urban Infrastructure Fund, whose principal function will be to plan and prepare bankable water and sanitation projects. Once bankable projects are identified, it will aid the fund in mobilizing private sector capital in the form of municipal bonds and pooled mecha-

nisms from domestic markets for financing, as well as provide support to ensure that the new projects specifically benefit the poor. In addition, new partnerships will be pursued to promote hygiene and hand washing to feed into a comprehensive diarrhea management program.

Through the agriculture program, USAID/India will develop public-private partnerships that introduce more efficient water use technologies and improve water resources management. It will also encourage shifting to crops and cropping practices that reduce chemical use and subsequent runoff.

To increase the efficiency of water used for power generation (of which a significant percentage is used for agriculture production), USAID/India, through the Water and Energy Nexus Project, is identifying ways to improve the efficiency of the end uses of water and energy resources across multiple sectors.

Measuring Results

The following indicators will be used to track progress of U.S. activities in India:

- Number of people with access to an improved drinking water supply
- Number of people with access to improved sanitation facilities
- Number of additional hectares under improved water conservation technologies or management practices

Results in 2008

USAID-supported projects provided over 135,000 Indians with increased access to a water supply and provided nearly 400,000 with improved sanitation facilities. Capacity-building efforts succeeded in increasing source revenue by more than \$629 million in 14 municipalities. Assistance was provided to six municipalities so that they could invest more than \$64 million in crucial water and sanitation projects.

Water and Sanitation Goals

Roughly 80 percent of Indonesians have access to an improved source of water, while approximately half of the population has access to an improved source of sanitation. Yet only 31 percent of urban and 9 percent of rural dwellers have access to piped water, and an abysmally low percentage (2 percent) has access to sewerage in urban areas. Roughly 25 percent of the population still practice open defecation. Water sources are rapidly shrinking, due to factors such as increased deforestation and unsustainable land-use patterns. U.S. goals are to:

- **Improve access to water supply and sanitation, and promote better hygiene**
- **Improve water resources management**

Approach

USAID will target improvements in water delivery at 33 water utilities, and additional resources will support municipal water and sanitation planning, operator and management training, and community-based demonstration projects. Assistance will also be provided to stimulate financing to local governments to improve and expand water supply and sanitation facilities. Public campaigns will be launched to promote health and hygiene practices at the household level. USAID will continue to work with commercial entities to produce and market point-of-use water treatment solutions to improve water quality, targeting low-income families with children under five. To address water resources management issues, USAID will expand opportunities for communities, NGOs, universities, and the private sector to participate in local management of water resources. Water- and sanitation-related activities will be carried out through three programs: the Safe Water System program, the Environmental Services Program, and the Health Services Program.

USAID works in collaboration with the World Bank, Asian Development Bank, Australian Agency for International Development, Dutch Trust Fund, and Canadian International Development Agency, which all have large programs focused on infrastructure development and rehabilitation in rural and urban water supply and sanitation.

Measuring Results

The following indicators will be used to track progress of U.S. activities in Indonesia:

- Number of people with access to improved drinking water supply
- Number of people with access to improved sanitation facilities
- Percent of households that adopt health and hygiene practices

Results in 2008

USAID supported a public-private partnership to increase access to safe water through a point-of-use product (Air RahMat). Over 75 million liters of drinking water have been treated over the past year. The product is available in over 10,000 outlets throughout Indonesia. The Safe Water System program (SWS) reached 105,000 people with safe water and Air RahMat activities and messages. The private sector partner, PT Tanshia, will continue to produce, distribute, and promote Air RahMat, ensuring sustainability after program funding ends. USAID supported the development of a household water treatment and storage policy launched by the Minister of Health in August and subsequently adopted in the community-based sanitation strategy.

The USAID-supported Environmental Services Program (ESP) collaborated with stakeholders at the local and national levels to build a strong foundation for sustainable access to improved safe water and sanitation facilities. Almost one million people gained improved access to safe water and 25,000 people gained improved access to sanitation facilities in 2008 as a result of this program. These household connections enabled poor families to pay 5–10 times less for safe water. Improved water productivity and delivery facilitated this significant increase in access. The number of households adopting adequate health and hygiene practices—the precursors to reducing childhood diarrhea—increased by 15.7 percent in program areas.

USAID supported the promotion of hygienic behaviors through the development of communication modules focused on hand washing with soap. Now institutionalized within the national Health Promotion Unit and poised for use in some

69,000 villages across the country, the modules have the potential to save the lives of large numbers of children who would otherwise die from diarrhea-related causes. The Health Services Program (HSP) trained 420 volunteers and village leaders from 130 villages using these modules. Forty-one schools serving over 1,000 children in Aceh integrated hand washing with soap into their curricula with HSP assistance. In coordination with the Ministry of Health, ESP, SWS, and corporate sponsors, HSP also co-hosted several large-scale events highlighting hand washing with soap in 2008, reaching more than 10,000 students and several journalists from Indonesia's top news sources.

Jordan

Water and Sanitation Goals

Jordan is one of the most water-challenged countries in the world. With a rapidly increasing population and limited water resources, the country's annual per capita water availability is less than 200 cubic meters. Most Jordanians have access to safe drinking water, although a continuous supply of water is rare, and most Jordanians receive water once or twice a week. Sixty-two percent of the population is served by the sanitation network. The key challenge in Jordan is to increase the availability of water supplies for municipal, industrial, and agricultural uses. U.S. goals are to:

- **Improve water resources management**
- **Improve access to water supply and sanitation, and promote better hygiene**
- **Increase water productivity**

Approach

USAID promotes improved water management by increasing awareness of water issues, strengthening water sector institutions and policies, and building new infrastructure. Efforts will be focused in Jordan's largest population centers, as well as in small communities, over the next five years. USAID will support the construction of

treatment facilities to provide sanitation services, with the long-term goal of providing appropriate water and sanitation infrastructure throughout the country. USAID will promote the use of treated wastewater, increase water efficiency, and explore alternative rural livelihood approaches to reduce the stress on groundwater resources. USAID support complements efforts of the Government of Jordan and its National Water Master Plan. Other key partners include the German (GTZ), Japanese, and French development agencies. Coordination among donors is conducted through a formal group currently chaired by GTZ.

Measuring Results

The following indicators will be used to track progress of U.S. activities in Jordan:

- Number of people benefiting from improved water resources management
- Number of policies and agreements that enhance integrated natural resources management
- Number of people trained in improved water management practices and approaches

Results in 2008

Water supply, distribution, and sanitation infrastructure created by USAID in the Greater Amman area provided improved services to over two million Jordanians. Over 7,000 Jordanians were trained in water use efficiency, water conservation, watershed management, wastewater reuse, environmental management systems, and other areas critical to water resources management. A new policy on water demand management was adopted. Over 500 small loans supported community initiatives to harvest water or use it more efficiently, benefiting 3,300 people. USAID's water and sanitation programs in Amman served an estimated 400,000 Iraqi refugees in the area, the majority of whom rely on storage tanks and once-weekly public water as their exclusive source of drinking water.

Madagascar

Water and Sanitation Goals

Despite Madagascar's ample water resources, the island's great variability in climate and rainfall often leads to recurring droughts in the south and southwest and flooding in the east, southeast, and north during the rainy/cyclone seasons. These climatic shocks restrict agricultural production and lead to food insecurity. A lack of potable water, limited access to sanitation facilities, and poor hygiene are the major causes of water-related illnesses and death, especially among children under five. Water-related illnesses are a burden on the country's economy, substantially lessening worker productivity and school attendance. The March 17, 2009, coup further complicates these challenges. While some U.S. humanitarian assistance activities that benefit the water and sanitation sector and that do not benefit the government continue, all non-humanitarian and humanitarian assistance to the government has been suspended; those activities will resume once a democratically elected government has been established. Within those constraints, USAID's goals will be to:

- **Increase access to drinking water supply and sanitation and improve hygiene**
- **Improve water resources management**
- **Increase water productivity**

Approach

USAID's approach in Madagascar reflects its cross-sectoral efforts in areas such as health, food security, environment, and rural development. Building on existing integrated activities, USAID Madagascar's Water, Sanitation, and Hygiene (WASH) program is designed to prevent water-related illnesses (specifically diarrhea) and create synergies with the health bilateral projects and Title II Food Security projects, as well as environmental buffer zones in three eco-regions. As appropriate to the local situation, USAID will expand its WASH program to increase sustainable access to improved drinking water supply and improved sanitation facilities for poor and vulnerable populations; stimulate private sector engagement for both products and services; and promote a more holistic understanding of the importance of functioning watersheds and clean water for human and ecosystem health.

As appropriate to the local situation, USAID will increase knowledge, practice, and demand for WASH services and products, such as the household point-of-use water purification solution (branded under the name Sûr'Eau), through community mobilization and the scaling-up of WASH behavior-change interventions proven to decrease diarrhea: hand washing; safe disposal of feces; and safe storage and treatment of drinking water at point of use. In collaboration with other donors, USAID hopes to expand the WASH movement by nurturing a range of WASH-friendly public spaces like schools, health centers, markets, tourist attractions, churches, and youth clubs. Broad coverage of WASH practices and facilities in public spaces influences household members to adopt good daily hygiene habits and develop a "social norm" leading to sustainable WASH behavior change. In order to increase access to drinking water and sanitation to over 225,000 and 115,000 people, respectively, and if the political situation permits it, USAID will supply WASH services and products through construction or rehabilitation of low-cost and small-scale water supply and sanitation infrastructure, including hand pumps that can be operated and maintained at the village level.

As appropriate to the local situation, USAID will support community-driven natural resource management and watershed management in large forest corridors that provide clean water for both human consumption and agricultural and rural enterprise purposes. To improve water resources management, USAID hopes to strengthen water users', management, and women's associations, establish local supply chains for WASH products and maintenance services, and train village masons, technicians, and entrepreneurs in constructing and marketing techniques for slabs, latrines, manual well drilling, and rope pumps.

Diarrhea is an underlying cause of chronic malnutrition. Access to water through wells or water treatment can help prevent diarrhea and ensure sound preparation of food. In addition, in conjunction with the Title II Food Security program and current health and nutrition projects, WASH will increase water productivity by promoting multiple uses of water for productive livelihood purposes. These multiple-use activities could include water for livestock, gardening, fish farming, and Food for Assets, which is a program to promote community participation in building or rehabilitating dams

and irrigation canals to improve water management for agricultural use. Offering alternatives to expand income-generating activities provides community members with sound incentives for efficient water use.

All activities will take place within the coup-related constraints and be coordinated with the Madagascar DIORANO-WASH platform and partners, such as the European Union, Japanese International Cooperation Agency (JICA), UNICEF, African Development Bank, local development funds, the local Rotary Foundation, World Bank, WaterAid, local and international NGOs, and the private sector. USAID will focus on activities that deliver direct benefits to communities, such as increasing private sector and household investment for water and sanitation products and services. USAID will also strive to build community capacity to make informed decisions about the rational use and management of their water resources, from watershed to distribution points.

Mozambique

Water and Sanitation Goals

Although home to southern Africa's largest hydroelectric plant, the Cahora Bassa dam, Mozambique is subject to recurring droughts in multiple regions. Just over one-third of Mozambique's 22 million residents have access to safe water, and only 23 percent of Mozambicans living in rural areas, compared to 66 percent living in urban areas, use an improved water source. Outbreaks of cholera and diarrhea from unsafe water sources are common, especially in drought-affected areas.

In June 2007, the Millennium Challenge Corporation signed a five-year, \$506.9 million Compact with the Republic of Mozambique to increase the productive capacity of the population in the northern districts, reduce the poverty rate, increase household income, and reduce chronic malnutrition in the targeted districts. The infrastructure portion of the Compact targets urban and rural water, urban sanitation, and roads. The goal of the program is to reduce poverty through measurable economic growth by improving access to water supply and sanitation services, promoting business activities and generating employment in the four northern provinces. The Government of

Mozambique expects that implementing the Compact will create jobs, improve access to potable water, improve health and sanitation, and foster the sustainability of key water and road sector institutions.

Approach

The Compact includes \$203.6 million for water and sanitation programs, including drinking water in eight cities and towns, sanitation in six cities, the rehabilitation of a critical water supply dam, and a rural water and sanitation program, as well as technical support and capacity building. It encompasses major improvements to existing drinking water infrastructure, such as distribution systems, treatment plants, water mains, and reservoirs, as well as sanitary and drainage improvements, including a latrine and hygiene education program. MCC's investments are part of a \$240 million multi-donor funding package that included funds from MCC, the World Bank/International Development Association, the Africa Catalytic Growth Fund, and the Global Partnership on Output-Based Aid.

Measuring Results

The following are some of the key indicators used to track the progress of each project.

- Number of productive days lost due to diarrheal illness
- Volume of individual water consumption (liters per capita per day)
- Percentage of urban population with access improved water sources
- Percentage of rural population with access to improved water sources
- Number of businesses connected to an improved water source
- Value (\$) of signed contracts for works for water systems

Progress to Date and Anticipated Results

MCA-Mozambique, created by the Government of Mozambique to implement the five-year Compact, is in the process of procuring service contracts for feasibility studies, design, and construction supervision for all water and sanitation investments.

Capacity building and technical assistance are also under way for implementing entities participating in managing water and sanitation components, as well as planning for future procurements.

During FY 2008, the Government of Mozambique met a key institutional milestone that had been negotiated with MCC at the time of the Compact signing by writing a water sector policy letter. The letter outlined the creation of new institutions that will strive to ensure the sustainability of water and sanitation investments in cities and towns outside of the current delegated management framework. World Bank funds had been used as part of the \$15 million Water Services and Institutional Support Project (WASIS) for legal work to create a new asset management unit (AIAS) and provincial water boards (CPASs). The Government of Mozambique subsequently passed a ministerial decree in April 2009 to create these institutions, which will receive technical support through the MCC-funded Compact.

Nigeria

Water and Sanitation Goals

Less than half of Nigerians have access to improved sources of water, and only 17.2 percent are served by piped water. Thirty percent of the population does not have access to adequate sanitation. Under the Nigerian constitution, state and local governments are responsible for providing basic services, including water and sanitation services. However, few of the 36 states or 774 local governments appear able to carry out this mandate. While all 36 states have state water boards that focus on municipal supply, most water supply is unreliable. And although some states have established Rural Water Supply and Sanitation Agencies (RUWASAs), these under-resourced entities have weak capacity. Local governments have very limited budgets and human resource capacity for implementing sector activities. Private sector and civil society engagement in the water sector is low, despite a national water policy that calls for a commercial orientation and private sector participation.

The U.S. goals are thus to:

- **Improve access to water supply and sanitation, and promote better hygiene**
- **Improve water and sanitation governance**
- **Promote sustainable financing for water supply services**

Approach

Through a new local governance agreement, USAID Nigeria will provide technical assistance and training in selected states to build the capacity of state water boards and local governments. USAID assistance will help local governments provide their citizens better access to potable water; improve the policy environment relating to water supply, and develop creative ways, including private-public partnerships, to improve available funding for water facilities to make water supply more secure, sustainable, and available. Water-related activities will be closely coordinated with U.S. Government-funded education and health programs to ensure that target schools and health facilities have adequate water and sanitation. USAID will support community coalitions, local government water and sanitation committees, and community-based organizations to articulate demand-side advocacy and develop capacity for maintenance and management of community-based water systems.

USAID will address these challenges in close collaboration with the Women Farmers Advancement Network, as well as state water boards, the RUWASAs, local governments, the state universal education board, parent-teacher associations, NGOs, and other partners. USAID is also developing a partial loan guarantee with the Urban Development Bank of Nigeria to support municipal clean water, sanitation, and hygiene projects.

In 2006/7, the CDC provided technical assistance to launch a point-of-use water treatment program. It will continue to be used for HIV/AIDS patients and in integrated cholera response efforts.

Approximately 120,000–150,000 Nigerians will benefit from U.S. government support.

Pakistan

Water and Sanitation Goals

Pakistan ranks in the high-risk category with respect to water availability, with only 1,384 cubic meters of clean water available per person. Approximately 40 percent of communicable diseases are waterborne, and approximately 11 percent of deaths of children under five are caused by diarrhea. As such, the goals of U.S. investments in Pakistan related to water **are to improve access to water supply and sanitation, and promote better hygiene.**

Approach

USAID supports the Pakistan Safe Drinking Water and Hygiene Promotion Project, which operates in 28 districts, six Federally Administered Tribal Areas (FATA), and six Frontier Regions (FRs). The program directly benefits approximately 3 million people, and reaches an estimated 32 million people with public communications campaigns. The project is designed to provide training in operations, maintenance, and management of water treatment units and drinking water source management; mobilize communities to develop cost recovery mechanisms; conduct reviews of water treatment and water quality testing technologies; and increase access to and use of safe drinking water through introduction of point-of-use treatment technologies, hygiene education, and behavior change communication.

A key principle underlying the project is that social mobilization leads to sustainability and better management of water facilities by communities. The project is also assisting the Government of Pakistan in designing a comprehensive hygiene promotion and capacity-building strategy. All of these activities will complement the Government of Pakistan's investment in water supply hardware and the government's ongoing "Clean Drinking Water for All" programs.

Measuring Results

The following indicators will be used to track progress of U.S. activities in Pakistan:

- Number of people with access to improved drinking water supply

- Number of people with access to improved sanitation facilities
- Reduction in childhood diarrhea

(National data is collected at four- to five-year intervals for these indicators. Interim process indicators are reported below.)

Results in 2008

By the end of 2008, the project had trained over 200 government, NGO, and community staff in operating and maintaining water filtration units. Over 1,000 water quality tests were conducted on drinking water sources. The project mapped and investigated 554 public drinking water sources and performed water quality tests in the FATA. Over 340,000 residents of rural areas in focus districts and agencies were reached with safe drinking water and hygiene promotion messages. More than 5,500 hygiene promoters have been mobilized, including doctors, religious leaders, and water filtration plant operators. An estimated population of 31 million was reached through relaying 44,000 radio messages nationwide. Orientation has also been completed with over 1,600 women volunteers to spread the hygiene messages in the wider communities.

In addition, 23,000 teachers received hygiene training and then successfully completed safe hygiene activities with 280,000 schoolchildren in government primary schools. These children are expected to carry these messages to their households, reaching a population of about 2.2 million.

Seeing an opportunity to engage both the private sector and the local communities in which they work, the project partnered with three companies to create a sustainable solution that met their common goals. Unilever provided soap to complement USAID's hand-washing education activities. Medentech provided 20 million of its Aquatabs, which remove much of bacteria and other harmful organisms in unclean water. Finally, Mobilink's mobile communications network sponsored free educational and promotional messages distributed to the cell phone network. With these private sector partners' contributions, USAID/Pakistan has developed a sustainable market-based approach to improving sanitation practices among target populations.

PHILIPPINES

Water and Sanitation Goals

Currently, the Philippines reports that 80 percent of its population has access to formal water supply services and 84 percent to basic sanitation services; wastewater treatment, however, remains grossly inadequate. Only 44 percent of the population has a piped water connection, and only 4 percent has a sewerage connection. Seemingly high access rates mask unmet needs. Waterborne diseases are the third leading cause of morbidity and mortality. The health and economic costs of poor water quality are estimated at more than \$1.6 billion per year.

Additionally, the fragmentation and deterioration of forests threatens the ability of watersheds to supply sufficient high-quality water. The Philippines has only 7.2 million hectares of forest cover remaining, representing less than 6 percent of the country's original cover. Overexploitation of forest resources and inappropriate land-use practices have disrupted the hydrological condition of watersheds, resulting in accelerated soil erosion, siltation of rivers and reservoirs, increased frequency and severity of flooding, and decreased supply of potable water. More than 50 percent of groundwater sources are contaminated, due to both solid and liquid wastes that are indiscriminately dumped or discharged into open spaces or water bodies.

Recognized as the center of global marine biological diversity, the Philippines sits at the apex of the Coral Triangle, a region covering 6 million square kilometers of ocean and coastal waters in Southeast Asia and the Western Pacific. The region is also home to some 363 million people, one-third of whom are directly dependent on coastal and marine resources for their livelihoods. The marine and coastal natural resources of the Coral Triangle, including the Philippines, are at immediate risk from a range of factors, including overfishing, unsustainable fishing methods, land-based sources of pollution, and climate change.

In the Philippines, U.S. goals are to:

- **Improve access to water supply and sanitation, and promote better hygiene**
- **Improve water resources management**
- **Improve water productivity**

Approach

To increase access to water and sanitation, USAID supports expansion of financing sources for water-related investments through the Philippine Water Revolving Fund (PWRF), supports preparation of projects benefiting at least 300,000 Filipinos for financing, and helps address critical water and financial sector policy issues (e.g., poor corporate governance and investment constraints from private financial institutions). The PWRF program is a collaborative effort between JICA and USAID under the U.S.-Japan Clean Water for the People Initiative, and is an essential step in enabling the Government of the Republic of the Philippines to implement its policy transition to market-based lending.

In conflict-affected areas of Mindanao, the second-largest island in the Philippines, USAID funds community water supply systems. The U.S. Department of Defense 1207 funds also supports the expansion of household level water supply systems in the Province of Jolo, Mindanao. Through the Philippine Sanitation Alliance (PSA), USAID protects biodiversity and reduces public health risks by promoting hygiene and reducing the amount of pollution discharged into the environment. The PSA assists local governments and private partners to design and build affordable sanitation systems, increases the capacity of local governments to address sanitation challenges, and supports hygiene promotion activities through promotion campaigns, WASH days for children, and informational outreach events. In addition to JICA, USAID collaborates closely with other donors such as the Asian Development Bank, World Bank, other bilateral aid programs of the Governments of Australia and Germany, and the multi-donor funded Water and Sanitation Program via the water sector donor forum.

Through the USAID Environmental Cooperation—Asia (ECO-Asia) Program, regional activities are undertaken with partners based in the Philippines, focused on developing promotion campaigns, utility twinning under WaterLinks, and sustainable water financing. A water and sanitation promotion toolkit is being pre-tested, and a dedicated interactive website is under development. Under WaterLinks—a joint collaboration between USAID, Asian Development Bank, and the International Water Association—three twinning arrange-

ments are being implemented between Philippine utilities and ones in China, Vietnam, and Indonesia. To facilitate sustainable water financing, ECO-Asia is working with the Association of Development Financing Institutions in Asia and the Pacific to develop a regional strategy for water financing. ECO-Asia continues to support knowledge sharing and exchange of best practices in Asia through its exchange and grant programs, which bring practitioners and policy leaders to regional events as participants or resource partners.

As part of a larger effort to address environmental governance in high-biodiversity areas in the country, USAID's Environmental Governance Project (EcoGov) is assisting 33 local governments in improved watershed management. Activities focus on developing and implementing forest land-use plans that identify areas for protection, conservation, and development, which are then supported by issuance of local environmental laws and their enforcement. EcoGov also supports efforts to reduce and properly dispose of waste through integrated waste management. Activities that contribute to water source protection include strengthening environmental regulations and policies by helping local governments increase recycling and composting rates, prepare sanitary landfills for proper disposal of wastes, and improve sanitation systems to reduce contamination of groundwater sources.

Through the Fisheries Improved for Sustainable Harvest (FISH) Project, USAID works in 29 municipalities and cities, covering four major ecosystems, to support improved fisheries management through marine protected areas, fishing effort restrictions, registration and licensing, and law enforcement. These activities aim to conserve biological diversity in four ecologically and economically important ecosystems by increasing the health and productivity of the fisheries, including increasing fish stocks by 10 percent. Also, USAID strongly supports the Philippines Government's participation in the Coral Triangle Initiative, a new initiative that also targets increased productivity of coastal and marine ecosystems.

Measuring Results

The following indicators will be used to track progress of U.S. activities in Philippines:

- Number of people with access to improved drinking water supply
- Number of people with access to improved sanitation facilities
- Number of hectares under improved natural resource management

Results in 2008

In FY 2008, USAID activities have contributed to improving access to water supply and sanitation in the Philippines. Efforts helped provide 293,997 and 44,891 people with improved access to drinking water supply and sanitation facilities, respectively. Through the PWRP, \$16.5 million of private funds were mobilized to finance seven water supply projects to help expand current water coverage for 275,000 new customers over the coming six to ten years. USAID's Development Credit Authority provided partial credit guarantees to these private sector loans, along with co-guarantor Local Government Unit Guarantee Corporation. The Philippines Government recent policy direction to expand sources of financing through private sector participation has been the driver to the growing interest of the private sector in funding water projects.

The PSA conducted stakeholders' consultation and planning workshops in four cities that produced action plans with short-, medium- and long-term projects that will provide the development blueprint for wastewater management at the local level. Technology and finance training for local governments and private sector partners were also held. These activities led to the construction of wastewater treatment plants for a new housing development, local government-owned public markets and slaughter houses and other commercial establishments that will improve access to sanitation for over 17,000 people. The PSA mobilized funding for sanitation facilities from partner local governments and the private sector totaling \$407,365. The EcoGov Project likewise mobilized over \$320,000 in investments in sanitation systems that helped improve access of over 27,000 people. This included construction and improvements of wastewater treatment facility

for markets and slaughterhouses in six cities in the Philippines. Also, USAID assistance has contributed to the promotion of hygiene by funding hand-washing campaigns to reduce waterborne diseases, especially in children.

On the institutional strengthening and capacity-building side, USAID is in the forefront of coordinating the reform agenda for the water supply and sanitation sector, as well as capacity building for better governance and service provision. For example, it developed models for water utilities on strategic business planning for water supply and septage management. ECO-Asia developed and trained Philippine partners in how to use a 10-step WATSAN Promotion Toolkit for local governments and water utilities. Under Waterlinks three twinning arrangements were developed: Metropolitan Waterworks and Sewerage System partnering with Yancheng China Water Company, Manila Water Company partnering with Danang Water Company of Vietnam, and Maynilad Water Services partnering with the Tirtanadi water utility of Indonesia. ECO-Asia also assisted the Local Water Utilities Administration to establish an Efficiency Improvement Program lending window to facilitate sustainable water financing.

In the areas of water resource management and water productivity, under the EcoGov and FISH projects, USAID placed over 275,000 hectares of forests and coastal areas under improved natural resource management.

Sudan

Water and Sanitation Goals

Following years of civil war, Sudan's water supply and sanitation facilities are hardly functional from a physical perspective, much less a managerial and financial point of view. While 70 percent of Sudan's population has access to improved drinking water, only 34 percent has access to improved sanitation facilities, with far lower levels of coverage in southern Sudan. The U.S. goal is **to improve access to water supply and sanitation and to promote better hygiene.**

Approach

USAID is developing a new initiative to enable state and county governments to meet the needs of their citizens, including the provision of potable water, sanitation, and hygiene in rural areas of southern Sudan and the three areas of Abyei, Southern Kordofan, and Blue Nile—areas hard hit by civil war. USAID will work with the Government of National Unity and the Government of Southern Sudan, along with community groups, to provide and manage basic water and sanitation infrastructure and to foster behavior change in accessing and using these facilities. As part of this effort, USAID will provide new grants to increase sustainable access to drinking water and sanitation. Women will continue to be encouraged to take a central role in the decision-making process, such as by holding managerial roles in community water committees.

Drawing upon the lessons learned from the Sudan Health Transformation Project (SHTP-I), USAID will continue to support the transition from emergency relief efforts (e.g., potable water supplies for displaced persons) to sustainable delivery of water supply and sanitation through SHTP-II. The SHTP-II project will expand water supply and sanitation activities beyond primary health care facilities to entire health zones and will include community-based social marketing of point-of-use water treatment, sanitation, and health education messages focused on improving key hygiene behaviors. The chief targets of this effort will be the three main urban centers of southern Sudan (Juba, Wau, and Malakal) and other market towns within the health zones.

In 2009, USAID's urban water and sanitation program will focus on Wau, with the purpose to improve the quality and quantity of water produced by the Wau Urban Water Corporation. The program design for the Wau water utility will improve performance and management through an approach that focuses on physical rehabilitation combined with on the job capacity building and management systems strengthening. Sanitation infrastructure programming in Wau will be limited to health facilities within city limits.

Responding to the need to integrate water and sanitation programming with governance programming in order to improve sector sustainability and systems strengthening, USAID will fund

Tanzania

rural water and sanitation programs through the Building Responsibility for the Delivery of Government Services (BRIDGE) program. Beyond basic service delivery, BRIDGE will continue the effort to transition the sector towards more development approaches, such as sector systems strengthening; WASH governance at state and county levels; sector capacity issues; WASH sector investment sustainability; public, private, and community partnerships; spare parts supply chain; and operations and maintenance, with associated cost recovery.

USAID intends to improve access to drinking water for approximately 225,000 Sudanese and to sanitation facilities for about 90,000 Sudanese in 2009.

Measuring Results

The following indicators will be used to track progress of U.S. activities in Sudan:

- Number of people with access to improved drinking water supply
- Number of people with access to improved sanitation facilities
- Number of individuals trained in good health and hygiene practices

Results in 2008

USAID resources were used to provide treated water, rehabilitate water distribution infrastructure, and improve sanitation conditions in Juba. With USAID support, more than 176,000 people used point-of-use water treatments on a regular basis, and more than 16,000 Sudanese were directly reached with good health and hygiene practices in 2008. Through SHTP-I, 145 primary health centers in nine health zones received support for water, sanitation, and hygiene promotion. Community-based water user committees were developed, and community members received training in operation, maintenance, and administration to ensure sustainability. More than 228,000 Sudanese people accessed improved drinking water in 2008 as a result of USAID activities. Overall sanitation results were low in 2008, largely because of the longer and more complex implementation requirements of urban sanitation work. However, the USAID sanitation program in 2009 is on track to overcome constraints and produce more positive results in 2009.

Water and Sanitation Goals

Approximately one-third of Tanzania is arid or semi-arid, and frequent droughts afflict the majority of the country. Thirty-eight percent of the land is under various levels of protected status. However, illegal logging continues, and Tanzania has the third-fastest deforestation rate in Africa, due mainly to its position in the bottom 10 percent of the world's economies in terms of per capita income. With 80 percent of the population living in and subsisting on rural areas, the need for fuelwood drives the deforestation rate. The impact on watersheds has been devastating, and in some cases total watershed collapse is imminent. Only 55 percent of Tanzanians have access to improved drinking water. The substantial gap between urban and rural access to safe drinking water (81 percent urban vs. 46 percent rural) is due mainly to rural communities' dependence on their ever-dwindling natural resources. The sanitation situation is even worse, with only 33 percent of Tanzanians having access to improved sanitation. The majority of schools, estimated at 63 percent, do not meet the minimum target for latrines, 65 percent have no water access, and 80 percent have no hand-washing facilities.

The U.S. goals are to:

- **Improve access to water supply and sanitation, and promote better hygiene**
- **Support sustainable water and watershed resources management to benefit human populations and the ecosystems upon which they depend**
- **Reduce the prevalence of water-related disease**
- **Increase the time available for productive activities, including education**
- **Promote greater investments in physical capital**

Approach

USAID's approach in Tanzania integrates natural resources management, rural development, and WASH to increase sustainable access to WASH services by poor rural and small-town dwellers; increase the number and capacity of water user

groups to design, manage, and take a leadership role in the long-term sustainable provision of safe and clean access to drinking water; increase access to sustainable financing for communities and entrepreneurs engaged in WASH activities; and support sustainable management of water resource quantity and quality for domestic water supply and ecosystem services.

For example, the U.S. Forest Service previously conducted watershed assessments in the Greater Gombe Ecosystem and the Ugalla Community Landscape Conservation Area, and are now working with USAID partners to plan for new science-based water supply developments to ensure long-term sustainability. Similar approaches, with an emphasis on supporting water user groups and working within the Districts Water Sector Development Program, are being implemented in the Ruaha-Rungwa River Sub-Basin, the Wami-Ruvu River Basin, the Pangani River Basin, and the Lake Manyara/Lake Natron Inland Basin, which will benefit over 200,000 Tanzanians by the end of FY 2009. Phase II of The Water and Development Alliance (WADA)—a collaboration between USAID and Coca-Cola—will implement water supply and sanitation activities in schools, clinics, and communities in the Ruaha-Rungwa and Wami-Ruvu River Basins, as well as the Menai Bay region of Zanzibar. Planned activities are intended to provide over 50,000 Tanzanians with access to improved drinking water and sanitation facilities in 2009.

In addition to USAID, MCC is also actively engaged in water and sanitation activities in Tanzania. Tanzania's MCC Compact, signed in FY 2008, dedicates \$66 million to a project designed to increase the quantity and reliability of potable water for domestic and commercial use. The project focuses on improving water supply infrastructure in two cities—Dar es Salaam and Morogoro. MCC's goals are to increase the capacity of the Lower Ruvu Water Treatment Plant serving the Dar es Salaam area, from about 180 million liters per day to approximately 270 million liters per day; improve system efficiencies in the Dar es Salaam distribution network by reducing non-revenue water via reduction of physical leaks and commercial losses; and increase the capacity of the water supply system serving the Morogoro area from approximately 18 million liters per day to approximately 33 million liters per day.

USAID and MCC are members of the Development Partner Group on Water and collaborate regularly with multilateral donors such as the World Bank, African Development Bank, and United Nations. Project approaches and activities contribute to implementing Tanzania's Water Sector Development Strategy, which facilitates multi- and bilateral donor harmonization.

Measuring Results

The following indicators will be used to track progress of U.S. activities in Tanzania:

- Number of people with access to improved drinking water supply
- Number of people with access to improved sanitation facilities
- Prevalence of diarrhea
- Volume of individual water consumption (liters per capita per day)
- Volume of water produced (million liters per day)
- Value (\$) of feasibility and design contracts for water systems

Results in 2008 and Anticipated Results for 2009/10

Through the first phase of the WADA program, USAID and Coca-Cola improved access to safe drinking water, improved sanitation, and increased hygiene in two of the country's most critical river basins, reaching over 20,000 people (primarily schoolchildren), as well as over 150,000 people in communities that benefited from improved watershed protection. WADA provided rain catchment systems, improved sanitation infrastructure (such as ventilated improved pit toilets), initiated and trained community water and sanitation management committees, and applied integrated river basin management strategies in the Pangani and Wami-Ruvu, two of Tanzania's most populated river basins. USAID also supported water supply and sanitation projects to communities within six critical ecosystems, and in 2008 important new groundwork was laid by forming water user groups, completing community mapping, conducting hydrogeologic surveys for well placement, and developing community sanitation and hygiene priority plans, all leading to implementation of final projects in 2009.

In addition, the Government of Tanzania has created an institution to implement the five-year MCC Compact—MCA-Tanzania—and the Compact entered into force in FY 2008. MCA-Tanzania is currently undertaking procurements related to the water activities. It will award two consultancies in the second quarter of 2009: Feasibility Study and Pre-Design of the Lower Ruvu Water Treatment Plant, and Project Coordination and Technical Assistance of the Water Project. Construction for all works is anticipated in 2010.

ANNEX B

**USAID FY 2008 Country-Specific
Obligations and Results**

TABLE B.1.ALLOCATIONS FROM FOREIGN ASSISTANCE ACCOUNTS TO MEET THE 2008 STATUTORY REQUIREMENT ON WATER SUPPLY, SANITATION,AND HYGIENE ACTIVITIES BY OPERATING UNIT AND FUNDING ACCOUNT* (millions of dollars)

	Total	DA	CSH	ESF	AEECA	IDA	GHAI
TOTAL	295.650**	126.796	33.900	83.343	6.030	33.103	12.478
Sub-Saharan Africa	108.252	52.084	13.500	15.200	0.000	15.000	12.468
Angola	1.000	1.000	—	—	—	—	—
Benin	0.250	—	0.250	—	—	—	—
Botswana	0.200	—	—	—	—	—	0.200
Burundi	1.050	1.000	0.050	—	—	—	—
Côte d'Ivoire	0.927	—	—	—	—	—	0.927
Democratic Republic of the Congo	4.250	3.000	1.250	—	—	—	—
Ethiopia	4.630	1.650	1.100	—	—	—	1.880
Ghana	2.300	2.000	0.300	—	—	—	—
Kenya	6.125	4.000	1.000	—	—	—	1.125
Liberia	2.650	2.500	0.150	—	—	—	—
Madagascar	2.969	2.269	0.700	—	—	—	—
Malawi	0.306	—	0.300	—	—	—	0.006
Mali	0.700	0.500	0.200	—	—	—	—
Mozambique	5.814	2.000	0.600	—	—	—	3.214
Namibia	0.343	—	—	—	—	—	0.343
Nigeria	3.855	2.000	0.150	—	—	—	1.705
Rwanda	0.800	0.100	0.300	—	—	—	0.400
Senegal	2.200	2.000	0.200	—	—	—	—
Somalia	2.500	2.000	0.500	—	—	—	—
South Africa	0.990	—	—	—	—	—	0.990
Sudan	16.140	6.000	4.940	5.200	—	—	—
Tanzania	3.145	3.000	—	—	—	—	0.145
Uganda	3.778	2.000	0.250	—	—	—	1.528
Zambia	2.905	2.000	0.900	—	—	—	0.005
USAID Africa Regional	7.425	7.065	0.360	—	—	—	—
USAID East Africa Regional	1.000	1.000	—	—	—	—	—
USAID Southern Africa Regional	2.000	2.000	—	—	—	—	—
USAID West Africa Regional	3.000	3.000	—	—	—	—	—
Development Grants Program (Africa)	10.000	—	—	10.000	—	—	—
IDA Attributions	15.00	—	—	—	—	15.000	—
Asia and the Pacific	74.988	54.864	12.700	7.424	0.000	0.000	0.000
Afghanistan	18.399	11.894	2.000	4.505	—	—	—
Bangladesh	5.900	4.400	1.500	—	—	—	—
Cambodia	5.350	4.000	1.350	—	—	—	—
India	4.000	3.000	1.000	—	—	—	—
Indonesia	16.850	12.500	4.350	—	—	—	—
Pakistan	7.100	2.950	2.500	1.650	—	—	—
Philippines	1.519	0.250	—	1.269	—	—	—
Timor-Leste	5.000	5.000	—	—	—	—	—
USAID Regional Development Mission/Asia	7.700	7.700	—	—	—	—	—
USAID Asia Regional	3.170	3.170	—	—	—	—	—

	Total	DA	CSH	ESF	AEECA	IDA	GHAI
Middle East and North Africa	57.000	0.000	0.000	57.000	0.000	0.000	0.000
Egypt	1.300	—	—	1.300	—	—	—
Jordan	41.000	—	—	41.000	—	—	—
Lebanon	8.000	—	—	8.000	—	—	—
West Bank/Gaza	5.700	—	—	5.700	—	—	—
State Near East Regional (MEPI)	1.000	—	—	1.000	—	—	—
Unallocated	18.103	0.000	0.000	0.000	0.000	18.103	0.000
Unallocated	18.103	—	—	—	—	18.103	—
Latin America and the Caribbean	16.491	10.762	2.500	3.219	0.000	0.000	0.010
Bolivia	3.000	3.000	—	—	—	—	—
Dominican Republic	2.200	2.200	—	—	—	—	—
Ecuador	5.794	3.000	2.000	0.794	—	—	—
Haiti	3.497	0.562	0.500	2.425	—	—	0.010
Mexico	1.000	1.000	—	—	—	—	—
Nicaragua	1.000	1.000	—	—	—	—	—
Central Programs	14.286	9.086	5.200	0.000	0.000	0.000	0.000
USAID Economic Growth, Agriculture and Trade (EGAT)	9.086	9.086	—	—	—	—	—
USAID Global Health (GH)	5.200	—	5.200	—	—	—	—
Europe and Eurasia	6.030	0.000	0.000	0.000	6.030	0.000	0.000
Armenia	1.000	—	—	—	1.000	—	—
Georgia	0.530	—	—	—	0.530	—	—
Kosovo	4.500	—	—	—	4.500	—	—
Oceans and International Environmental and Scientific Affairs (OES)	0.500	0.000	0.000	0.500	0.000	0.000	0.000
OES	0.500	—	—	0.500	—	—	—

* FY 2008 budget data represent best estimates from USAID analysis of information as of March 2009.

Source: USAID.

** This amount represents the \$300 million FY 2008 Water Earmark minus rescission and reduction to address food security.

Source: USAID.

ACRONYMS: DA = Development Assistance; CSH = Child Survival and Health Fund; ESF = Economic Support Fund; AEECA = Assistance for Europe, Eurasia, and Central Asia; IDA = International Disaster Assistance; GHAI = Global HIV/AIDS Initiative.

TABLE B.2. ESTIMATED FY 2008 USAID OBLIGATIONS FOR ALL USAID WATER SECTOR ACTIVITIES (WATER SUPPLY, SANITATION AND HYGIENE; WATER RESOURCES MANAGEMENT; AND WATER PRODUCTIVITY) BY OPERATING UNIT* (millions of dollars)

	Water Supply, Sanitation, and Hygiene **	Water Resources Management	Water Productivity	Total
TOTAL	389.916	58.580	38.909	489.606
Sub-Saharan Africa	173.829	12.691	25.131	211.651
Angola	0.995	—	—	0.995
Benin	0.355	—	—	0.355
Botswana	0.200	—	—	0.200
Burkina Faso	0.508	—	1.393	1.901
Burundi	0.755	0.100	0.259	1.114
Chad	1.799	—	1.000	2.799
Côte d'Ivoire	0.927	—	—	0.927
Democratic Republic of the Congo	15.038	—	—	15.038
Eritrea	1.393	—	—	1.393
Ethiopia	13.803	1.321	14.000	29.124
Ghana	2.485	0.925	—	3.410
Guinea	—	—	0.760	0.760
Guinea-Bissau	0.100	—	—	0.100
Kenya	8.377	5.510	0.514	14.401
Liberia	3.101	1.663	0.170	4.934
Madagascar	5.859	0.802	—	6.661
Malawi	0.323	0.270	—	0.593
Mali	0.710	0.650	0.950	2.310
Mozambique	4.669	0.300	1.000	5.969
Namibia	0.343	—	—	0.343
Niger	0.781	—	1.563	2.344
Nigeria	3.705	—	—	3.705
Rwanda	0.723	0.100	—	0.823
Senegal	2.250	—	—	2.250
Sierra Leone	0.914	—	—	0.914
Somalia	10.556	—	—	10.556
South Africa	0.990	—	—	0.990
Sudan	51.765	1.050	0.500	53.315
Tanzania	1.995	—	1.050	3.045
Togo	0.050	—	—	0.050
Uganda	8.483	—	—	8.483
Zambia	2.547	—	1.672	4.219
Zimbabwe	2.105	—	—	2.105
Africa Regional	7.225	—	—	7.225
East Africa	1.000	—	—	1.000
Southern Africa	2.000	—	0.300	2.300
West Africa	5.000	—	—	5.000
Development Grants Program (Africa)	10.000	—	—	10.000
Middle East and North Africa	95.671	8.400	2.920	106.991
Egypt	1.416	—	—	1.416
Iraq	21.575	—	—	21.575

	Water Supply, Sanitation, and Hygiene **	Water Resources Management	Water Productivity	Total
Jordan	41.700	7.900	2.500	52.100
Lebanon	8.000	0.500	—	8.500
Morocco	—	—	0.220	0.220
West Bank/Gaza	19.162	—	—	19.162
Asia Middle East Regional	0.100	—	—	0.100
Middle East Regional	3.718	—	0.200	3.918
Asia and the Pacific	69.340	24.009	3.760	97.109
Afghanistan	14.028	0.110	0.726	14.864
Bangladesh	9.911	3.062	—	12.973
Burma	2.234	—	—	2.234
Cambodia	5.283	—	—	5.283
India	7.317	—	—	7.317
Indonesia	8.436	6.931	—	15.367
Kazakhstan	—	—	0.010	0.010
Kyrgyz Republic	—	—	0.810	0.810
Nepal	0.268	—	—	0.268
Pakistan	7.485	5.720	2.000	15.205
Papua New Guinea	0.053	—	—	0.053
Philippines	1.519	6.786	0.174	8.479
Sri Lanka	0.194	—	—	0.194
Tajikistan	—	—	0.030	0.030
Timor-Leste	3.470	1.400	—	4.870
Turkmenistan	—	—	0.010	0.010
Uzbekistan	0.040	—	—	0.040
Vietnam	0.132	—	—	0.132
Asia Regional	2.020	—	—	2.020
Regional Development Mission/Asia	6.950	—	—	6.950
Europe and Eurasia	6.997	0.788	0.816	8.601
Armenia	0.887	—	0.210	1.097
Azerbaijan	0.020	—	—	0.020
Georgia	1.250	—	0.566	1.816
Kosovo	4.500	—	—	4.500
Moldova	—	0.108	0.010	0.118
Russia	0.050	0.600	—	0.650
Ukraine	—	—	0.030	0.030
Joint Eurasia Regional	0.290	0.080	—	0.370
Latin America and the Caribbean	24.421	10.031	2.060	36.512
Bolivia	3.916	—	—	3.916
Colombia	0.700	—	—	0.700
Dominican Republic	0.100	—	—	0.100
Ecuador	5.979	0.407	—	6.386
Guatemala	0.250	—	—	0.250
Haiti	10.605	7.212	—	17.817
Jamaica	—	0.350	—	0.350
Mexico	0.901	—	0.915	1.816

	Water Supply, Sanitation, and Hygiene **	Water Resources Management	Water Productivity	Total
Nicaragua	1.970	—	1.145	3.115
Panama	—	0.700	—	0.700
Latin America and the Caribbean	—	1.362	—	1.362
Central Programs	19.658	2.661	4.222	28.742
EGAT	7.660	2.661	4.222	14.543
Global Health	5.200	—	—	5.200
Office of Development Programs (DGP)	6.798	—	—	6.798
Bureau for Democracy, Conflict and Humanitarian Assistance/Office of Foreign Disaster Assistance ***	—	—	—	2.201

* FY 2008 budget data represent best estimates from USAID analysis of information as of April 2009.

** Total WSSH includes all FY 2008 IDA funding for WSS by country in the total amount of \$91.398 million.

*** This amount is for a separate USAID Water Sector category of Disaster Risk Reduction (DRR).

Source: USAID.

TABLE B.3. ESTIMATED FY 2008 USAID OBLIGATIONS FOR WATER SUPPLY, SANITATION, AND HYGIENE ACTIVITIES BY OPERATING UNIT* (millions of dollars)

Region/Bureau	Country or Operating Unit	Water Supply and Sanitation**	IDA Water Supply and Sanitation***	P.L. 480-Funded Water Supply and Sanitation****	Total
Sub-Saharan Africa	Angola	0.995	—	—	0.995
	Benin	0.355	—	—	0.355
	Botswana	0.200	—	—	0.200
	Burkina Faso	—	—	0.508	0.508
	Burundi	0.755	—	—	0.755
	Chad	—	1.232	0.567	1.799
	Côte d'Ivoire	0.927	—	—	0.927
	Democratic Republic of the Congo	7.033	1.526	6.479	15.038
	Eritrea	—	1.393	—	1.393
	Ethiopia	6.049	7.754	—	13.803
	Ghana	2.325	—	0.160	2.485
	Guinea-Bissau	—	0.100	—	0.100
	Kenya	5.425	1.510	1.442	8.377
	Liberia	2.604	—	0.497	3.101
	Madagascar	3.602	—	2.257	5.859
	Malawi	0.323	—	—	0.323
	Mali	0.710	—	—	0.710
	Mozambique	4.014	0.655	—	4.669
	Namibia	0.343	—	—	0.343
	Niger	—	—	0.781	0.781
	Nigeria	3.705	—	—	3.705
	Rwanda	0.723	—	—	0.723
	Senegal	2.200	0.050	—	2.250
	Sierra Leone	—	—	0.914	0.914
	Somalia	1.727	8.829	—	10.556
	South Africa	0.990	—	—	0.990
	Sudan	22.625	29.140	—	51.765
	Tanzania	1.995	—	—	1.995
	Togo	—	0.050	—	0.050
	Uganda	3.878	4.605	—	8.483
	USAID Africa Regional (AFR)	7.225	—	—	7.225
	USAID East Africa Regional	1.000	—	—	1.000
	USAID Southern Africa Regional	2.000	—	—	2.000
	USAID West Africa Regional	5.000	—	—	5.000
	Zambia	2.547	—	—	2.547
	Zimbabwe	—	2.105	—	2.105
	Development Grants Program (Africa)	10.000	—	—	10.000
	Sub-Saharan Africa Total	101.275	58.949	13.605	173.829

Region/Bureau	Country or Operating Unit	Water Supply and Sanitation**	IDA Water Supply and Sanitation***	P.L. 480-Funded Water Supply and Sanitation****	Total
Asia and the Pacific	Afghanistan	11.583	2.445	—	14.028
	Asia Regional	2.020	—	—	2.020
	Bangladesh	1.416	1.495	7.000	9.911
	Burma	—	2.234	—	2.234
	Cambodia	5.283	—	—	5.283
	India	7.000	0.317	—	7.317
	Indonesia	8.431	0.005	—	8.436
	Nepal	—	0.268	—	0.268
	Pakistan	6.725	0.760	—	7.485
	Papua New Guinea	—	0.053	—	0.053
	Philippines	1.519	—	—	1.519
	Sri Lanka	—	0.194	—	0.194
	Regional Development Mission/Asia	6.950	—	—	6.950
	Timor-Leste	3.270	0.200	—	3.470
	Uzbekistan	0.040	—	—	0.040
	Vietnam	—	0.132	—	0.132
	Asia and the Pacific Total	54.237	8.103	7.000	69.340
Central Programs	EGAT	7.660	—	—	7.660
	Global Health	5.200	—	—	5.200
	Office of Development Programs	6.798	—	—	6.798
	Central Programs Total	19.658	—	—	19.658
Europe and Eurasia	Armenia	0.887	—	—	0.887
	Azerbaijan	0.020	—	—	0.020
	Georgia	0.500	0.750	—	1.250
	Joint Eurasia Regional	0.290	—	—	0.290
	Kosovo	4.500	—	—	4.500
	Russia	0.050	—	—	0.050
	Europe and Eurasia Total	6.247	0.750	—	6.997
Latin America and the Caribbean	Bolivia	3.000	—	0.916	3.916
	Colombia	0.700	—	—	0.700
	Dominican Republic	—	0.100	—	0.100
	Ecuador	5.787	0.192	—	5.979
	Guatemala	0.250	—	—	0.250
	Haiti	10.060	0.545	—	10.605
	Mexico	—	0.901	—	0.901
	Nicaragua	0.200	0.286	1.484	1.970
	Latin America and the Caribbean Total	19.997	2.024	2.400	24.421

Region/Bureau	Country or Operating Unit	Water Supply and Sanitation**	IDA Water Supply and Sanitation***	P.L. 480-Funded Water Supply and Sanitation****	Total
Middle East and North Africa	Asia Middle East Regional	0.100	—	—	0.100
	Egypt	1.416	—	—	1.416
	Iraq	—	21.575	—	21.575
	Jordan	41.700	—	—	41.700
	Lebanon	8.000	—	—	8.000
	USAID Middle East Regional (OMEP)	3.718	—	—	3.718
	West Bank/Gaza	19.162	—	—	19.162
	Middle East and North Africa Total	74.096	21.575	—	95.671
Total Directive—All Regions		275.510	91.401	23.005	389.916

* FY 2008 budget data represent best estimates from USAID analysis of information as of April 2009.

** All of these activities meet the 2008 statutory requirements.

*** \$61.981 million of the total \$91.398 million went toward activities that provided “sustainable” water supply and/or sanitation services and met the 2008 statutory requirements. \$35.033 million of the \$61.981 million supported activities in Africa.

**** P.L. 480 funds are part of the Food For Peace program and cannot be counted toward the 2008 statutory requirement.

TABLE B.4. FY 2008 NUMBER OF PEOPLE WITH ACCESS TO IMPROVED DRINKING WATER SUPPLY AND SANITATION FACILITIES, AND LITERS OF DRINKING WATER DISINFECTED WITH POINT-OF-USE (POU) TREATMENT PRODUCTS, BY COUNTRIES AND OPERATING UNITS*

	People with Access to Improved Drinking Water Supply	People with Access to Improved Sanitation Facilities	Liters of Disinfected Drinking Water by POU
TOTAL	7,739,566	6,290,891	7,427,182,582
Sub-Saharan Africa	1,195,570	579,521	5,959,681,782
Benin	—	—	270,000
Burundi	8,700	—	—
Chad	—	—	60,150
Ethiopia	—	36,120	—
Ghana	68,995	—	—
Kenya	5,600	35,000	1,650,000,000
Liberia	87,000	—	—
Madagascar	—	1,265	1,823,203,500
Malawi	—	—	141,405,432
Mali	14,788	—	—
Rwanda	—	—	69,212,500
Somalia	—	5,298	—
South Africa	—	415,838	—
Sudan	395,880	—	—
Tanzania	228,607	—	—
Uganda	—	—	154,870,400
Zambia	—	—	2,120,659,800
USAID Africa Regional	—	68,000	—
USAID East Africa Regional	368,000	—	—
USAID West Africa Regional	18,000	18,000	—
Asia and the Pacific	2,221,695	1,060,750	287,167,000
Afghanistan	—	—	212,167,000
Bangladesh	343,438	265,524	—
India	136,718	398,148	—
Indonesia	404,625	180,502	75,500,000
Pakistan	986,734	—	—
Philippines	273,680	44,891	—
USAID Regional Development Mission/Asia	76,500	171,685	—
Middle East and North Africa	3,807,000	4,421,475	—
Egypt	50,000	—	—
Jordan**	3,106,000	4,122,575	—
Lebanon	—	253,900	—
West Bank/Gaza	651,000	45,000	—
Latin America and the Caribbean	464,152	229,145	9,000,000
Bolivia	3,570	61,350	—
Ecuador	9,582	4,595	—
Guatemala	—	—	9,000,000
Haiti	451,000	153,200	—

	People with Access to Improved Drinking Water Supply	People with Access to Improved Sanitation Facilities	Liters of Disinfected Drinking Water by POU
Central Programs	—	—	1,171,333,800
USAID Global Health	—	—	1,171,333,800
Europe and Eurasia	51,149	—	—
Armenia	45,000	—	—
Kosovo	6,149	—	—

* FY 2008 budget data represent best estimates from USAID analysis of information as of November 2008.

** USAID Jordan reported people with “improved supply access” and people with “improved sanitation access.”

Source: USAID.



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